

**Pectinoidea (Mollusca: Bivalvia: Pectinidae:
Propeamussiidae) from Hansa Bay,
Papua New Guinea**

(King Leopold III Biological Station, Laing Island, Papua New Guinea - Contribution No. 337.)

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Abstract

Thirty five species of Pectinoidea (33 Pectinidae, 2 Propeamussiidae) are described from Hansa Bay, Papua New Guinea. *Serratovola pallula* n. sp. is here introduced as new to science. Lectotypes are designated of *Pecten cloacatus* Reeve, 1853 and *Pecten tricarinatus* Anton, 1838, and type localities are designated for *Pecten vexillum* Reeve, 1853, *Pecten spectabilis* Reeve, 1853, and *Ostrea squamosa* Gmelin, 1791.

Key words: Pectinoidea, Propeamussiidae, Pectinidae, Hansa Bay, Papua New Guinea.

Introduction

During 1976 to 1983 several Belgian expeditions were undertaken to Hansa Bay, Papua New Guinea, viz. PNG 1976 (IG 25.485), PNG 1977 (IG 25.681, 25.715, 25.930), PNG 1978 (IG 25.848, 25.955), PNG 1979 (IG 26.080, 26.086, 26.132), PNG 1980 (IG 26.227, 26.253), PNG 1981 (IG 26.373) and PNG 1983 (IG 26.700). Hansa Bay is part of the Bismarck Sea and situated between Madang and Sarang (4°10'S 144°52'E) and is about 8 km long. Several rivers carry a large amount of sediment to Hansa Bay and near the shore the bottom is muddy, further off shore more sandy with coral rubble. In the central part of the bay coral reefs (Duangit reefs) and an island (Laing Island), surrounded by coral reefs, are exposed. Sea temperature and salinity average 29.4°C and 33.4‰ respectively (Bouillon, et al. 1986). The difference in tide level is about 1.30 m (Claereboudt and Bouillon 1987).

Thirty five species of Pectinoidea were collected, including twenty six alive, on exposed reefs, by scuba-diving and by dredging or trawling to 125 m. One pectinid species is new to science. Three type localities are designated herein.

The material is deposited in the molluscan collection of the Koninklijk Belgisch Instituut voor Wetenschappen (KBIN) and additional material in the reference collection of the author (ex Tursch collection).

Taxonomy and conchological terms are according to Waller (1972, 1978, 1984, 1986, 1991, 1993).

Abbreviations and text conventions

AMS, Australian Museum, Sydney

BMNH, Natural History Museum, London

HD, Henk H. Dijkstra collection, Sneek

IG, Inventaire général (indication to KBIN collection material)

KBIN, Koninklijk Belgisch Instituut voor Wetenschappen, Brussels

LSL, Linnaean Society, London;
 MHNG, Muséum d'Histoire Naturelle, Geneva
 MNHN, Muséum National d'Histoire Naturelle, Paris
 NHMW, Naturhistorisches Museum Wien, Vienna
 NNM, Nationaal Natuurhistorisch Museum (formerly RMNH), Leiden
 PC, Phil Crandall collection, Okinawa
 PNG, Papua New Guinea
 QM, Queensland Museum, Brisbane
 SMTD, Staatliches Museum für Tierkunde, Dresden
 TMMT, Taiwan Museum, Taipei
 UMZC, University Museum of Zoology, Cambridge (U.K.)
 USNM, National Museum of Natural History, Washington D.C.
 UUZM, Uppsala University Zoological Museum, Uppsala
 WAM, Western Australian Museum, Perth
 ZMA, Zoologisch Museum, Amsterdam
 ZMUC, Zoologisk Museum, Copenhagen
 ZSI, Zoological Survey of India, Calcutta

Systematics

Superfamily **PECTINOIDEA** Wilkes, 1810 [emend., Waller, 1978]

Family **PROPEAMUSSIIDAE** Abbott, 1954

Genus **Parvamuissium** Sacco, 1897

Parvamuissium Sacco, 1897a: 102; 1897b: 48 (diagnosis).

Type species (by original designation): *Pecten (Pleuronectes) duodecimlamellatus* Bronn, 1832; Upper Miocene, northern Italy.

Parvamuissium pauciliratum (E.A. Smith, 1903)
 (Plate 1, figs. 1-2)

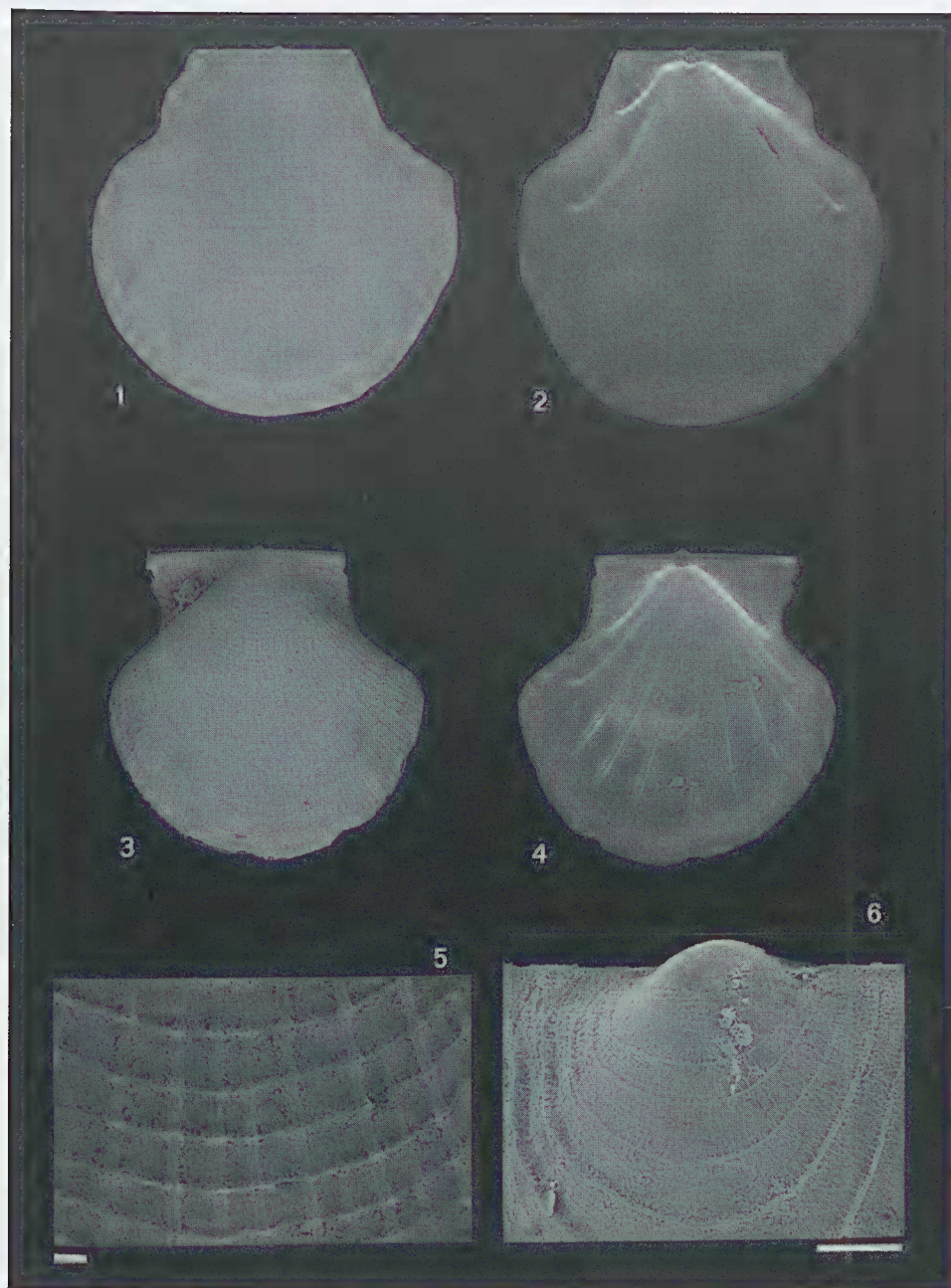
Amuissium paucilirata [sic] E.A. Smith, 1903: 622, pl. 36, figs. 23-24.

Parvamuissium pauciliratum (Smith). Dijkstra, 1995b: 26, figs. 107-110, 151-152 [references, description, discussion].

Type material: Lectotype BMNH 1903.9.17.17, designated by Dijkstra (1995b: 28).

Type locality: S Nilandu Atoll, Maldives Islands, 2-66 m.

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1976: 206, Laing Island, dredged, 30 m, leg. J. Pierret, 29.III.1976, 3 valves, IG 25.485; PNG 1976: NW Duangit, trawled, 60-65 m, leg. B. Tursch and J. Pierret, 1976, 1 live specimen, IG 26.132; PNG 1979: 419, Duangit reef, E-side, fine coral sand, diving, hand-dredged, 48 m, leg. J. Pierret, 23.VI.1979, 7 live specimens, IG 26.080; PNG 1980: 12, SE Duangit, dredged, 50-52 m, leg. J. Pierret, 29.IX.1980, 1 valve, IG 26.227; PNG 1980: 40, E Duangit, dredged, 50 m, leg. J. Pierret, 22.IX.1980, 1 valve, IG 26.253; PNG 1980: 77, SE Duangit, dredged, 50 m, leg. J. Pierret, 21.XI.1980, 3 valves, IG 26.227; PNG 1981: 181, Wanginem reef, hand-dredged, 43 m, leg. J. Pierret, 28.V.1981, 1 valve, IG 26.373; PNG 1981: 392, muddy sand, hand-dredged, 57 m, leg. J. Pierret, 28.VI.1981, 1 specimen, IG 26.373; off Awar, trawled, 100-125 m, 3 live specimens, ex Tursch coll. (HD).

**Plate 1.**

Figures 1-2. *Parvamussium pauciliratum* (E.A. Smith, 1903). HD, off Awar, 100-125 m, H 8.1 mm, db. 1. Left valve, exterior. 2. Left valve, interior. **3-6.** *Parvamussium scitulum* (E.A. Smith, 1885). HD, off Awar, 75 m, H 6.9 mm, db. 3. Left valve, exterior. 4. Left valve, interior. 5. Left valve, exterior, central section (scale bar 100 μ m). 6. Left valve, exterior, prodissoconch + preradial section (scale bar 100 μ m).

Distribution: Northern Indian Ocean, Indonesia to New Caledonia. Living on muddy, muddy sand or sandy bottoms amongst coral rubble at littoral to bathyal depths.

Parvamusium scitulum (E.A. Smith, 1885)
(Plate 1, figs. 3-6)

Amusium scitulum E.A. Smith, 1885: 312, pl. 23, figs. 4-4b.

Parvamusium scitulum (Smith). Dijkstra, 1995b: 31, figs. 43-46, 153-154 [synonymy, references, description, discussion].

Type material: Lectotype BMNH 1887.2.9.3319/1, designated by Dijkstra (1995b: 31).

Type locality: "Challenger" stn. 188, 9°59'S 139°42'E, S of New Guinea, 51 m.

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1980: 78, NE Laing Island, dredged, 48-50 m, leg. J. Pierret, 23.XI.1980, 1 valve, IG 26.227; PNG 1980: 80, Hansa Bay, SE Duangit, dredged, 50-52 m, leg. J. Pierret, 29.XI.1980, 1 valve; off Duangit reef, dredged, 60-80 m, 3 live specimens, ex Tursch coll. (HD); off Awar strip, dredged, 75 m, 4 live specimens, ex Tursch coll. (HD); off Awar strip, dredged, 100-125 m, 1 live specimen, ex Tursch coll. (HD); Laing Island, 7 live specimens, ex Tursch coll. (HD).

Distribution: Western and southwestern Pacific, from Japan to New Caledonia. Living on muddy or muddy sand sediments with coral rubble at littoral to bathyal depths.

Family **PECTINIDAE** Wilkes, 1810 [emend. Waller, 1978]
Subfamily **PECTININAE** Wilkes, 1810
Tribe **DECATOPLECTININI** Waller, 1986
Genus **Anguipecten** Dall, Bartsch & Rehder, 1938

Anguipecten Dall, Bartsch & Rehder, 1938: 92.

Type species (by original designation): *Anguipecten gregoryi* Dall, Bartsch & Rehder, 1938 [= *Pecten lamberti* Soubervie in Montrouzier & Soubervie, 1874]. Miocene-Recent, Indo-West Pacific (Hayami, 1989: 15).

Anguipecten picturatus Dijkstra 1995
(Plate 2, fig. 1)

Pecten aurantiacus A. Adams & Reeve, 1850: 74, pl. 21, f. 12.

Anguipecten picturatus Dijkstra, 1995a: 15 (new name for *P. aurantiacus* Adams & Reeve, not Röding, 1798, not J. Sowerby, 1820, not Defrance, 1825). Dijkstra & Kastoro, 1997: 279 [synonymy, references].

Type material: Holotype BMNH 1950.11.14.8.

Type locality: "China Sea" [South China Sea].

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1977, Laing Biological Station, Duangit reef, 45 m, leg. B. Tursch and J. Pierret, 1 valve, IG 25.930; PNG 1981: 77, SE of Laing Island, dredged, 45 m, leg. J. Pierret, 21.XI.1980, 4 valves, IG 26.227; Laing Island, 40 m, 1 specimen, ex Tursch coll. (HD).

Distribution: Western Indian Ocean and Indo-West Pacific. Living amongst coral rubble on sand or muddy sediments at littoral to sublittoral depths.

Remarks: The present specimens are similar to the type material, although the auricles are slightly smaller and the concentric lamellae on the right valve somewhat more prominent and the shell is more brightly coloured with orange and creamy spots.

This species is often confused in the literature with *A. lamberti*, which is only known from the Hawaiian Islands and New Caledonia.

Anguipecten superbus (G. B. Sowerby 2nd, 1842)
(Plate 2, figs. 2-3)

Pecten superbus G. B. Sowerby 2nd, 1842: 62, pl. 12, f. 11.

Anguipecten superbus (Sowerby). Habe, 1981: 69, pl. 1, f. 3. Abbott & Dance, 1982: 312, fig. Dijkstra, 1984: 8, fig. Springsteen & Leobrera, 1986: [text unpag.], pl. 93, f. 8.

Type material: Two syntypes BMNH 1950.11.14.78-79.

Type locality: Not mentioned in original description, although "Amboina" [= Ambon, Indonesia] on labels of type lot.

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1980: Laing Island, leg. J. Pierret, v. 1980, 3 valves, IG 26.253; Laing Island, 1 specimen, ex Tursch coll. (HD).

Distribution: Western Indian Ocean, and western and southwestern Pacific. Living on sand amongst coral rubble in the littoral.

Remarks: The present specimens are similar to the type material, but the radial costae vary in number (21 to 25); otherwise no different shell features.

Genus *Bractechlamys* Iredale, 1939

Bractechlamys Iredale, 1939: 366.

Type species (by original designation): *Bractechlamys evecta* Iredale, 1939 [= *Pecten vexillum* Reeve, 1853], tropical Indo-West Pacific and western Atlantic.

Bractechlamys oweni (De Gregorio, 1884)

Pecten pictus G. B. Sowerby 2nd, 1842: 62, pl. 20, f. 233.

Pecten (*Chlamys*) *oweni* De Gregorio, 1884: 133 (new name for *P. pictus* Sowerby, 1842; not Da Costa, 1778; not Röding, 1798; not Deshayes in Laborde, 1830; not Goldfuss, 1833).

Chlamys (*Aequipecten*) sp. cf. "*picta* (Sowerby)". Kuroda, 1932: 95, f. 108.

Cryptopecten oweni (De Gregorio). Habe, 1951: 77; 1977: 84; 1981: 67, pl. 5, f. 2. Bernard, Cai and Morton, 1993: 50.

Semipallium oweni (De Gregorio). Dijkstra, 1990: 8, 10.

Type material: Holotype BMNH 1950.11.14.53.

Type locality: Isle of Baicus, Philippines.

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1976: 206, W of Laing Island, dredged, 30 m, leg. J. Pierret, 29.iii.1976, 1 valve, IG 25.485; PNG 1979: 31, Mililat (N of Madang), barrier reef, sand, coral rubble, hand-dredged, 12-25 m, leg. J. Pierret, 17.ii.1979, 1 live specimen, IG 26.080; PNG 1979: 47, Nagada (N of Madang), Wongat reef, sand, coral, dredged, 25 m, leg. J. Pierret, 30.x.1979, 1 live specimen, IG 26.086; PNG 1979: 49, Mililat (N of Madang), large reef at E side of Wongat, coral, 3-5 m, leg. J. Pierret, iii.1979, 1 live specimen, IG 26.080; PNG 1979: 54, Nagada (N of Madang), Wongat reef, sand, coral, algae, dredged, 25 m, leg. J. Pierret, 5.xi.1979, 1 live specimen, IG 26.086; PNG 1980: 2, Nagada (N of Madang), Rash reef, dredged, 25 m, leg. J. Pierret, 29.viii.1979, 1 valve, IG 26.086; PNG 1980: 18, Nagada (N of Madang), Wongat reef, dredged, 25-30 m, leg. J. Pierret, 6.ix.1979, 2 valves, IG 26.086; PNG 1980: 41, Nagada (N of Madang), Wongat reef, dredged, 25 m, leg. J. Pierret, 24.ix.1979, 1 valve, IG 26.086; PNG 1981: 59, Wanginem 2, dredged, 40 m, leg. J. Pierret, 22.x.1980, 1 valve, IG 26.253.

Distribution: Southern Japan, Philippines, Indonesia, Papua New Guinea to the Solomon Islands. Living amongst coral rubble on sand in the littoral.

Remarks: The present specimens are similar to the type material, although the coloration of the shell is somewhat paler. The radial costae are slightly more prominent than on the type specimen, and vary in number (12 to 14).

De Gregorio (1884) renamed *Pecten pictus* (preocc. Goldfuss, 1833), but overlooked *Pecten pictus* Deshayes in Laborde, 1830, which is a junior synonym of *Gloripallium maculosum* (Forsskal, 1775).

Bractechlamys vexillum (Reeve, 1853)

(Plate 2, fig. 4)

Pecten digitatus Hinds, 1845: 61, pl. 27, f. 2.

Pecten vexillum Reeve, 1853: text unpag., pl. 27, f. 114a-b.

Pecten distans Lamarck, 1819. G. B. Sowerby 2nd, 1842: 61, pl. 13, f. 46; pl. 18, f.

182 (not Lamarck). Reeve, 1853: text unpag., pl. 13, f. 49 (not Lamarck).
Pecten janus Montrouzier in Fischer, 1858: 340 (not Münster in Goldfuss, 1833).
Pecten (Chlamys) zeteki Hertlein, 1935: 306, pl. 19, f. 9 (new name for *Pecten digitatus* Hinds, 1845; not *P. digitatum* Perry, 1811).
Bractechlamys evecta Iredale, 1939: 367, pl. 5, f. 20-20a.
Semipallium zeteki (Hertlein). Grau, 1959: 122, pl. 41, f. 1-2.
Comptopallium vexillum (Reeve). Waller, 1972: 243, pl. 4, f. 64-75, pl. 5, f. 76-83, 86.
Dijkstra, 1985: 7, figs.

Type material: Lectotype BMNH 197010, designated by Waller (1972: 243).

Type locality: Not mentioned in original description, although on labels of type lot "Australian Seas". Material from New Caledonia (MNHN), however, is very similar to the type specimens. A new type locality: Ilot Maître, Nouméa, New Caledonia, sandy bottom with seaweed, 20 m (MNHN) of *P. vexillum* is here introduced.

Material examined: The type material. PAPUA NEW GUINEA: PNG 1980: Hansa Bay, Mililat (N of Madang), small reef N, sandy slope and coral debris, hand-dredged, 12-15 m, leg. J. Pierret, 5.iii.1979, IG 26.080, 1 valve.

Distribution: Throughout the western and southwestern Pacific, from the Philippines, Indonesia, Papua New Guinea to New Caledonia. Living amongst seaweeds and coral rubble on muddy or sandy sediments in the littoral.

Remarks: The present specimen is similar to the type material, although more triangular than suborbicular of shape, but intermediate variations are also observed (MNHN).

Genus *Decatopecten* [Rüppell] G. B. Sowerby 2nd, 1839

Decatopecten [Rüppell] G. B. Sowerby 2nd, 1839: 37, 78, 121, f. 172.

Type species (by original designation): *Ostrea plica* Linnaeus, 1758. Miocene-Recent, Indo-West Pacific (Hayami, 1989: 15).

Decatopecten radula (Linnaeus, 1758)

Ostrea radula Linnaeus, 1758: 698.

Pecten argenteus Reeve, 1853: sp. 168 [text unpag.], pl. 35, f. 168.

Comptopallium pauciplicatum Iredale, 1939: 359.

Comptopallium radula (Linnaeus). Dijkstra: 1991: 43 [references, discussion].

Type material: Syntypes LSL and UUZM, not registered [Will be discussed in a forthcoming paper].

Type locality: "O. Indico" [= southwestern Pacific].

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1983: 105, Laing Island, lagoon, 2 m, leg. C. Massin, 16.x.1983, 1 live specimen, IG 26.700; Laing Island, dredged, 30 m, 1 specimen, ex Tursch coll. (HD); Laing Island, 1 specimen, ex Tursch coll. (HD); Koil Island, 1 specimen, ex Tursch coll. (HD).

Distribution: Throughout the Indo-West Pacific. Living amongst seaweeds, under stones or dead corals on muddy or sandy sediments in the littoral.

Remarks: The present specimens are similar to the type material. Observed material (AMS, BMNH, KBIN, MNHN, NNM, WAM, ZMA, ZMUC) are variable in radial costae (9 to 14).

Webb (1957: 53) described a new form of *D. radula* from northwestern Australia (with strongly, closely concentrically arranged, lamellae on the radial ribs), which could be an ecomorph (under study).

Dautzenberg & Bavay (1912: 25) considered *Pecten argenteus* Reeve, 1853 a synonym of *D. radula*. Dijkstra (1991: 44) synonymized it with *B. vexillum*. Recent juvenile material of *D. radula* from the Philippines (HD) is more similar to the type material of *P. argenteus*.

Genus *Excellichlamys* Iredale, 1939

Excellichlamys Iredale, 1939: 366.

Type species (by original designation): *Pecten spectabilis* Reeve, 1853. Miocene-Recent. Indo-West Pacific (Hayami, 1989: 15).

Excellichlamys spectabilis (Reeve, 1853)

Pecten spectabilis Reeve, 1853: text unpag., pl. 29, f. 128.

Pecten histrionicus Gmelin var. Petit de la Saussaye, 1853: 150, pl. 5, f. 2 (not *Ostrea histrionica* Gmelin, 1791).

Pecten (*Aequipekten*) *histrionicus* var. *spectabilis* Reeve. Dautzenberg & Bavay, 1912: 22.

Chlamys (*histrionica* var.?) *spectabilis* (Reeve). Kuroda, 1932: 95.

Aequipekten histrionicus var. *spectabilis* (Reeve). Lamy, 1935: 314.

Excellichlamys spectabilis (Reeve). Iredale, 1939: 366. Kuroda, Habe & Oyama, 1971: 366, pl. 79, f. 12-13. Waller, 1972: 246, pl. 5, f. 87-92, pl. 6, f. 93-102. Habe, 1981: 68. Abbott & Dance, 1982: 308, fig. Dijkstra, 1987: 9, figs.

Type material: Holotype UMZC 1461.

Type locality: Unknown. Here designated as Mauritius, according to similar material in BMNH. S. Morris (Darwin Museum, Downe, UK) suggests, after comparing three specimens of *E. spectabilis* from the general collection of the BMNH and the holotype of *E. spectabilis* (UMZC 1461), on an accompanying label: "They are obviously the same species. The smallest has virtually the same colour marks. These are not types but could have come from the same lot as the Saul Coll. 'Holotype'."

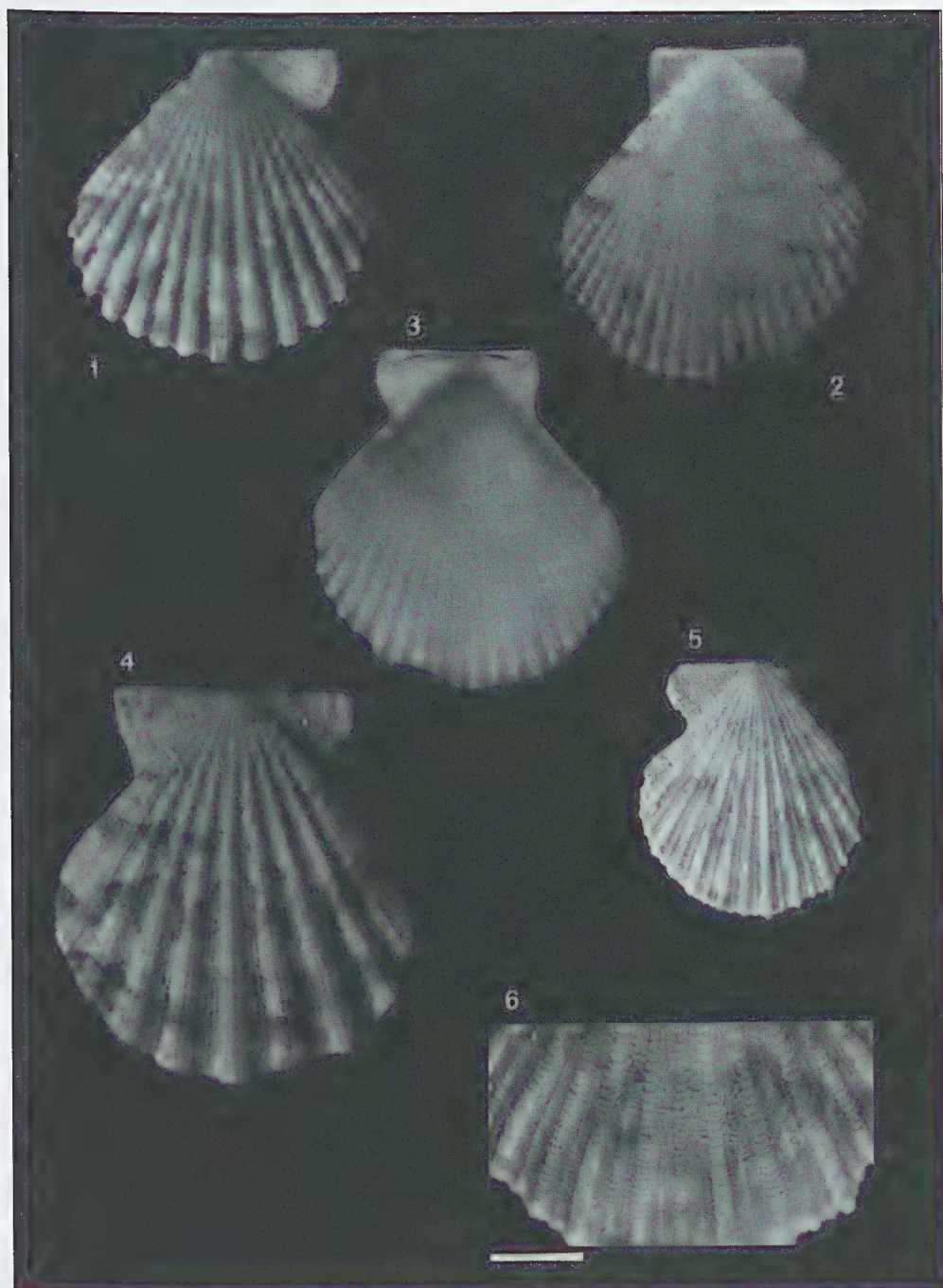
**Plate 2.**

Figure 1. *Anguipecten picturatus* Dijkstra, 1995. KBIN, SE Laing Island, 45 m, H 19.2 mm, rv, exterior. **2-3.** *Anguipecten superbus* (Sowerby, 1842). KBIN, Laing Island, H 32.9 mm, rv. **2.** Right valve, exterior. **3.** Right valve, interior. **4.** *Brachteclamys vexillum* (Reeve, 1853). KBIN, Mililat, 12-15 m, H 28.0 mm, lv, exterior. **5-6.** *Glorichlamys elegantissima* (Deshayes, 1863). KBIN, NE Laing Island, 30-35 m, H 13.9 mm, lv. **5.** Left valve, exterior. **6.** Left valve, interior, ventral marginal section (scale bar 1 mm).

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1976: 206, W Laing Island, dredged, 30 m, leg. J. Pierret, 29.iii.1976, 1 valve, IG 25.485; PNG 1976: 222, Laing reef, dredged, 20 m, leg. A. Capart, 2.iv.1976, 1 valve, IG 25.485; PNG 1979: 18, Nagada (N of Madang), Wongat reef, dredged, 25-30 m, leg. J. Pierret, 6.ix.1979, 4 valves, IG 26.086; PNG 1979: 40, Gosem reef, dredged, 25-30 m, leg. J. Pierret, 23.ix.1979, 1 valve, IG 26.086; PNG 1979: 57, Wongat reef, sponges, muddy sand, dredged, 30 m, leg. J. Pierret, 7.xi.1979, 1 live specimen, IG 26.086; PNG 1980: 2, Nagada (N of Madang), Rash reef, dredged, 25 m, leg. J. Pierret, 29.viii.1980, 2 valves, IG 26.086; PNG 1980: 8, Nagada (N of Madang), Tab reef, dredged, 30 m, leg. J. Pierret, i.ix.1980, 1 valve, IG 26.086; PNG 1980: 11, Nagada (N of Madang), Wongat reef, dredged, 30 m, leg. J. Pierret, 2.ix.1980, 1 valve, IG 26.086; PNG 1980: 26, Nagada (N of Madang), Large Riu reef, dredged, 25 m, leg. J. Pierret, 14.ix.1980, 1 valve, IG 26.086; PNG 1980: 28, Laing Island I1, dredged, 28 m, leg. J. Pierret, 9.ix.1980, 1 valve, IG 26.253; PNG 1980: 30, Nagada (N of Madang), Gosem Island, dredged, 20 m, leg. J. Pierret, 17.ix.1980, 1 valve, IG 26.086; PNG 1980: 36, SE Duangit, dredged, 52 m, leg. J. Pierret, 17.ix.1980, 2 valves, IG 26.253; PNG 1980: 41, Nagada (N of Madang), Wongat reef, dredged, 25 m, leg. J. Pierret, 24.ix.1980, 1 valve, IG 26.086; PNG 1980: 43, S Duangit, E-side, dredged, 45-50 m, leg. J. Pierret, 25.ix.1980, 2 valves, IG 26.253; PNG 1980: 46, Laing Island, E1, dredged, 25-30 m, leg. J. Pierret, 3.x.1980, 1 valve, IG 26.253; PNG 1980: 59, Wanginem 2, dredged, 40 m, leg. J. Pierret, 22.x.1980, 1 valve, IG 26.253; PNG 1980: 67, Nagada (N of Madang), N Wongat reef, dredged, 25 m, leg. J. Pierret, 13.xi.1979, 1 valve, IG 26.086; PNG 1980: 69, Purar reef, under coral, 10 m, leg. J. Pierret, 29.x.1980, 1 valve, IG 26.253; PNG 1980: 236, Laing Island, W-side, hand-dredged, 17 m, leg. D. Christensen, 4.vi.1979, 1 valve, IG 26.080; PNG 1980: 258, Laing Island, W-side, diving, hand-dredged, 18-20 m, leg. D. Christensen, 6.vi.1979, 1 valve, IG 26.080; PNG 1980: 348, Duangit reef, hand-dredged, 10-15 m, leg. D. Christensen, vi.1980, 1 valve, IG 26.080; PNG 1981: 43, S Duangit, E-side, dredged, 45-50 m, leg. J. Pierret, 25.ix.1981, 1 valve, IG 26.253.

Distribution: Throughout the Indo-Pacific. Living amongst coral rubble on muddy or sandy sediments at littoral to sublittoral depths.

Remarks: The present specimens are similar to the type material, although the auricles are somewhat more unequal and the radial costae of the type specimen more prominent without small grooves near the ventral margin. Intermediate variations, however, are also observed (HD, MNHN, NNM, ZMA).

Genus *Glorichlamys* Dijkstra, 1991

Glorichlamys Dijkstra, 1991: 45.

Type species (by original designation): *Pecten elegantissimus* Deshayes, 1863. Recent. Indo-West Pacific.

Glorichlamys elegantissima (Deshayes, 1863)
(Plate 2, figs. 5-6)

Pecten elegantissimus Deshayes, 1863: 32, pl. 4, f. 11-12.

Glorichlamys elegantissima (Deshayes). Dijkstra, 1991: 45, f. 91 [synonymy, references, discussion].

Type material: Depository unknown.

Type locality: Réunion.

Material examined: HANSA BAY, PAPUA NEW GUINEA: PNG 1980: 58, NE-end of Laing Island, hand-dredged, 30-35 m, leg. J. Pierret, 1980, 1 valve, IG 26.080.

Distribution: Throughout the Indo-Pacific. Living amongst coral rubble or in sandy sediments at littoral to sublittoral depths.

Genus *Gloripallium* Iredale, 1939

Gloripallium Iredale, 1939: 357.

Type species (by original designation): *Ostrea pallium* Linnaeus, 1758. Miocene-Recent. Indo-West Pacific (Hayami, 1989: 15).

Gloripallium pallium pallium (Linnaeus, 1758)

Ostrea pallium Linnaeus, 1758: 697.

Gloripallium pallium pallium (Linnaeus). Dijkstra, 1991: 46 [synonymy, references, discussion].

Type material: Syntypes LSL, not registered [Will be discussed in a forthcoming paper].

Type locality: "O. australiore and Indico" [Southwestern Pacific].

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1977, Laing Island, Duangit reef, dredged, 45 m, leg. J. Bouillon et al., 1977, 1 valve, IG 25.930; PNG 1980: C1, Laing Island, Duangit reef, dredged, 30 m, leg. J. Pierret, 29.v.1980, 1 valve, IG 26.253; PNG 1980: 5, Nagada (N of Madang), Tab Island, dredged, 10 m, leg. J. Pierret, 30.viii.1980, 1 valve, IG 26.086; PNG 1980: 44, Laing Island, before channel, dredged, 25-35 m, leg. J. Pierret, 25.ix.1980, 1 valve, IG 26.253; PNG 1980: 49, Mililat (N of Madang), Wongat reef, E-side, 3-5 m, leg. J. Pierret, iii.1980, 1 valve, IG 26.080; PNG 1980: 123, Duangit reef, hand-dredged, 40-42 m, leg. J. Pierret, 28.v.1980, 1 valve, IG 26.080; PNG 1980: 236, Laing Island (Madang prov.), W-side, hand-dredged, 17 m, leg. D. Christensen, 4.vi.1980, 1 valve, IG 26.080; PNG 1980: 251, Laing Island (Madang prov.), W-side, diving, hand-dredged, 25-30 m, leg. J. Pierret, 6.vi.1980, 1 valve, IG 26.080; PNG 1980: 258, Laing Island (Madang prov.), W-side, diving, hand-dredged, 18-20 m, leg. D. Christensen, 6.vi.1980, 2 valves, IG 26.080; PNG 1981: 66, Gwamblisim reef, dredged, 20-25 m, leg. J. Pierret, 27.x.1980, 1 specimen, IG 26.253.

Distribution: Throughout the Indo-Pacific. Living byssally attached under rocks or coral slabs or amongst coral rubble on sandy or muddy sediments in the littoral.

Genus *Juxtamusium* Iredale, 1939

Juxtamusium Iredale, 1939: 368.

Type species (by original designation): *Juxtamusium oblectatum* Iredale, 1939 [= *Pecten (Chlamys) coudeini* Bavay, 1903]. Recent. Indo-West Pacific.

Juxtamusium coudeini (Bavay, 1903)

Pecten (Chlamys) coudeini Bavay, 1903: 401, pl. 8, f. 3-4. Bavay, 1904: 206. Dautzenberg & Bavay, 1912: 17.

Juxtamusium oblectatum Iredale, 1939: 368. Waller, 1972: 250, 252, 254, f. 128-133, 135.

Juxtamusium coudeini (Bavay). Waller, 1984: 211. Dijkstra, 1984: 8, figs.; 1985: 10, figs.; 1990: 3, figs.

Type material: Holotype KBIN IG 10591.

Type locality: New Caledonia.

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1979: 42, Mililat (N. of Madang), Boys house, small reef, sand, debris, hand-dredged, 20 m, leg. J. Pierret, 9.iii.1979, 1 live specimen, IG 26.080; PNG 1979: 51, Nagada (N of Madang), Wongat reef, sand, dredged, 25 m, leg. J. Pierret, 2.xi.1979, 1 live specimen, IG 26.086; PNG 1979: 63, Nagada (N of Madang), N Wongat reef, dredged, 25 m, leg. j. Pierret, 10.xi.1979, 1 specimen + 1 valve, IG 26.086; PNG 1979: 74, Nagada (N of Madang), Tab Island, dredged, 5-7 m, leg. J. Pierret, 19.xi.1979, 1 valve, IG 26.080; PNG 1980: 26, Hansa Bay, Laing Island, square J2, sand, coral rubble, dredged, 30-35 m, leg. J. Pierret, 6.ix.1980, 1 live specimen, IG 26.253.

Distribution: Throughout the western Indian Ocean and the western and southwestern Pacific. Living byssally attached to corals or amongst sandy sediments at littoral to sublittoral depths.

Remarks: The present specimens are similar to the type material, although more brightly coloured. The conchological characters of the examined material (AMS, MNHN) are rather constant.

Grau (1959: 123) treated *J. oblectatum* [= *J. coudeini*] as a junior synonym of *Juxtamusium maldivense* (E. A. Smith, 1903). Waller (1972: 252), however, clearly determined the distinct shell characters of both species. Recently Waller (1986: 40) placed *Juxtamusium* in the tribe Decatopectinini.

Juxtamusium maldivense (E. A. Smith, 1903)

(Plate 3, figs. 1-3)

Pecten maldivensis E. A. Smith, 1903: 622, pl. 36, f. 19-20.*Juxtamusium maldivense* (Smith). Iredale, 1939: 368. Waller, 1972: 250, pl. 7, f. 111-127, pl. 8, f. 134. Dijkstra, 1984: 8, figs.; 1990: 4, figs.*Type material*: Lectotype BMNH 1903.9.17.49, designated by Waller (1972: 250).*Type locality*: Maldiv Islands, Indian Ocean.*Material examined*: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1979: 18, Nagada (N of Madang), Wongat reef, coral, algae, sand, dredged, 25-30 m, leg. J. Pierret, 6.ix.1979, 1 live specimen, IG 26.086; PNG 1979: 40B, Mililat (11 km N of Madang), small reef S, hand-dredged, 15-20 m, leg. J. Pierret, 8.iii.1979, 1 valve, IG 26.080.*Distribution*: Throughout the Indo-West Pacific. Living amongst coral rubble on sandy sediments at littoral to sublittoral depths.*Remarks*: The present specimen is similar to the type material, although somewhat more irregularly ribbed. Material examined (BMNH, HD, MNHN, ZMA) is rather variable in shell morphology (see also Waller, 1972: 252).Genus *Mirapecten* Dall, Bartsch & Rehder, 1938*Mirapecten* Dall, Bartsch & Rehder, 1938: 84.Type species (by original designation): *Mirapecten thaanumi* Dall, Bartsch & Rehder, 1938 [= *Pecten mirificus* Reeve, 1853]. Miocene-Recent. Indo-West Pacific.*Mirapecten mirificus* (Reeve, 1853)

(Plate 3, figs. 4-6)

Pecten mirificus Reeve, 1853: sp. 104 [text unpag.], pl. 26, f. 104.*Mirapecten mirificus* (Reeve). Dijkstra, 1991: 48 [synonymy, references, discussion].*Type material*: Holotype BMNH 1950.11.14.46.*Type locality*: "Amboyna" [= Ambon, Indonesia].*Material examined*: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1978: 44, Madang, leg. B. Tursch, 1978, 2 valves, IG 25.955; PNG 1979: 38, Nagada (N of Madang), Wongat reef, dredged, 25 m, leg. J. Pierret, 22.ix.1979, 2 valves, IG 26.086; PNG 1979: 45, Nagada (N of Madang), Large reef, dredged, 25-30 m, leg. J. Pierret, 27.x.1979, 1 valve, IG 26.086; PNG 1979: 117, Duangit reef,

hand-dredged, 40-46 m, leg. J. Pierret, 27.v.1979, 1 valve, IG 26.080; PNG 1980: 29, SE Duangit, dredged, 52 m, leg. J. Pierret, 10.ix.1980, 1 valve, IG 26.253; PNG 1980: 59, Wanginem 2, dredged, 40 m, leg. J. Pierret, 22.x.1980, 1 valve, IG 26.253; PNG 1980: 77, SE Laing Island, dredged, 45 m, leg. J. Pierret, 21.xi.1980, 1 valve, IG 26.227; PNG 1981: 392, hand-dredged, 57 m, leg. J. Pierret, 28.v.1981, 2 valves, IG 26.373; Duangit, dredged, 45 m, 1 valve, ex Tursch coll. (HD).

Distribution: Western Indian Ocean, western and southwestern Pacific. Living amongst coral rubble on sandy sediments at littoral to sublittoral depths.

Mirapecten rastellum (Lamarck, 1819)
(Plate 3, figs. 7-8)

Pecten rastellum Lamarck, 1819: 166, sp. 14.

Mirapecten rastellum (Lamarck). Dijkstra, 1991: 48 [synonymy, references, discussion]. Dijkstra, 1994: 474 [additional references, discussion].

Type material: Holotype MHNG 1088/24.

Type locality: "Habite les mers du Nord" [error]. A new type locality was designated by Dijkstra (1994: 474): Off Punta Engano, Mactan, Cebu, Philippines.

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1979: 5, Nagada (N of Madang), Tab Island, dredged, 10 m, leg. J. Pierret, 30.viii.1979, 1 valve, IG 26.086; PNG 1979: 12, Nagada (N of Madang), Wongat reef, top of reef, diving, 5 m, leg. J. Pierret, 2.ix.1979, 1 valve, IG 26.086; PNG 1979: 23, Laing Island, SW square H1, hand-dredged, 20 m, leg. J. Van Goethem and J. Pierret, 18.v.1979, 1 valve, IG 26.080; PNG 1979: 117, Duangit reef, hand-dredged, 40-46 m, leg. J. Pierret, 27.v.1979, 1 valve, IG 26.080; PNG 1979: 124, E Duangit reef, diving, hand-dredged, 40-46 m, leg. J. Pierret, 28.v.1979, 1 valve, IG 26.080; PNG 1979: 258, Laing Island (Madang prov.), W-side, diving, hand-dredged, 18-20 m, leg. D. Christensen, 6.vi.1979, 2 valves, IG 26.080; PNG 1979: 343, N Duangit reef, diving, hand-dredged, 25-32 m, leg. J. Pierret, 17.vi.1979, 1 valve, IG 26.080; PNG 1980, Laing Island, dredged, 30 m, leg. J. Pierret, 29.v.1980, 1 valve, IG 26.253; PNG 1980: 22, Manam Island, Borda reef, dredged, 50 m, leg. J. Pierret, 17.viii.1980, 2 valves, IG 26.253; PNG 1980: 43, S Duangit, E-edge, dredged, 45-50 m, leg. J. Pierret, 25.ix.1980, 1 valve, IG 26.253; PNG 1980: 44, Laing Island, before channel, dredged, 25-35 m, leg. J. Pierret, 25.ix.1980, 1 valve, IG 26.253; PNG 1980: 69, Purar reef, 10 m, leg. J. Pierret, 29.x.1980, 1 specimen, IG 26.253; PNG 1980: 89, NE Duangit, S-side, dredged, 40 m, leg. J. Pierret, 9.xii.1980, 1 valve, IG 26.227; PNG 1981: 16, leg. J. Bouillon and J. Pierret, 1981, 1 live specimen, IG 26.527; PNG 1981: 431, barrier reef, epifauna and commensal fauna, dredged, 58 m, leg. A. Capart et al., 4.vii.1981, 1 live specimen, IG 26.373; Duangit, dredged, 45 m, 1 valve, ex Tursch coll. (HD).

Distribution: Throughout the Indo-Pacific. Living amongst coral rubble on sandy sediments at littoral to sublittoral depths.



Plate 3.

Figures 1-3. *Juxtamusium maldivense* (E.A. Smith, 1903). KBIN, Mililat, 15-20 m, H 20.1 mm, rv. 1. Right valve, exterior. 2. Right valve, interior. 3. Right valve, exterior, postero-marginal section (scale bar 1 mm). **4-6.** *Mirapecten mirificus* (Reeve, 1853). KBIN, Laing Island, 45 m, H 26.3 mm, rv. 4. Right valve, exterior. 5. Right valve, interior. 6. Right valve, exterior, lamellae postero-marginal section (scale bar 1 mm). **7-8.** *Mirapecten rastellum* (Lamarck, 1819). KBIN, Purar reef, 10 m, H 40.9 mm, db. 7. Left valve, exterior. 8. Right valve, exterior.

Tribe **PECTININI** Lamarck, 1819

Genus **Minnivola** Iredale, 1939

Minnivola Iredale, 1939: 363.

Type species (by original designation): *Minnivola isomeres* Iredale, 1939.
Miocene-Recent. Indo-West Pacific (Hayami, 1989: 16).

Minnivola pyxidata (Born, 1778)

Ostrea pyxidata Born, 1778: 93; 1780: 108, pl. 6, f. 5-6.

Ostrea sulcata Gmelin, 1791: 3325 (not Müller, 1776, not Born, 1778).

Pecten pyxidatus (Born). G. B. Sowerby 2nd, 1842: 49, pl. 12, f. 24-25. Reeve, 1853: sp. 96 (text unpag.), pl. 24, f. 96a-b. Lynge, 1909: 153. Dautzenberg & Bavay, 1912: 3. Abbott & Dance, 1982: 304, fig.

Pecten crebricostatus Philippi, 1845: 100, pl. 1, f. 2.

Pecten (*Minnivola*) *pyxidatus* (Born). Springsteen & Leobrera, 1986: 326, pl. 93, f. 2. Wang, 1989: 180, f. 5.1-2.

Type material: Holotype NHMW 1822.

Type locality: Unknown. Type locality will be designated in a forthcoming publication on type material described by Born.

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1980: 61, SE Wanginem 2, dredged, 40 m, leg. J. Pierret, 23.x.1980, 1 valve, IG 26.253.

Distribution: Northern Indian Ocean, western and southwestern Pacific. Living amongst seaweed on muddy sand sediments at littoral to sublittoral depths. Judging from the absence of ctenolium in the mature stage, specimens are probably not byssally attached.

Remarks: The present specimen is similar to the type material. *Minnivola isomeres* Iredale, 1939 from Queensland (Australia) is probably only an ecomorphical form of *M. pyxidata*. It differs somewhat from the present species by a slightly more concave left valve, fewer radial riblets and a more uniform colour. Intermediate variations, however, are also observed (AMS, HD, MNHN, NNM, WAM, ZMA).

Genus **Serratovola** Habe, 1951

Serratovola Habe, 1951: 81.

Type species (by original designation): *Pecten tricarinatus* Anton, 1838 (not Defrance, 1825) [= *Pecten rubicundus* Recluz in Chenu, 1843]. Pliocene-Recent. Indo-West Pacific (Hayami, 1989: 16).

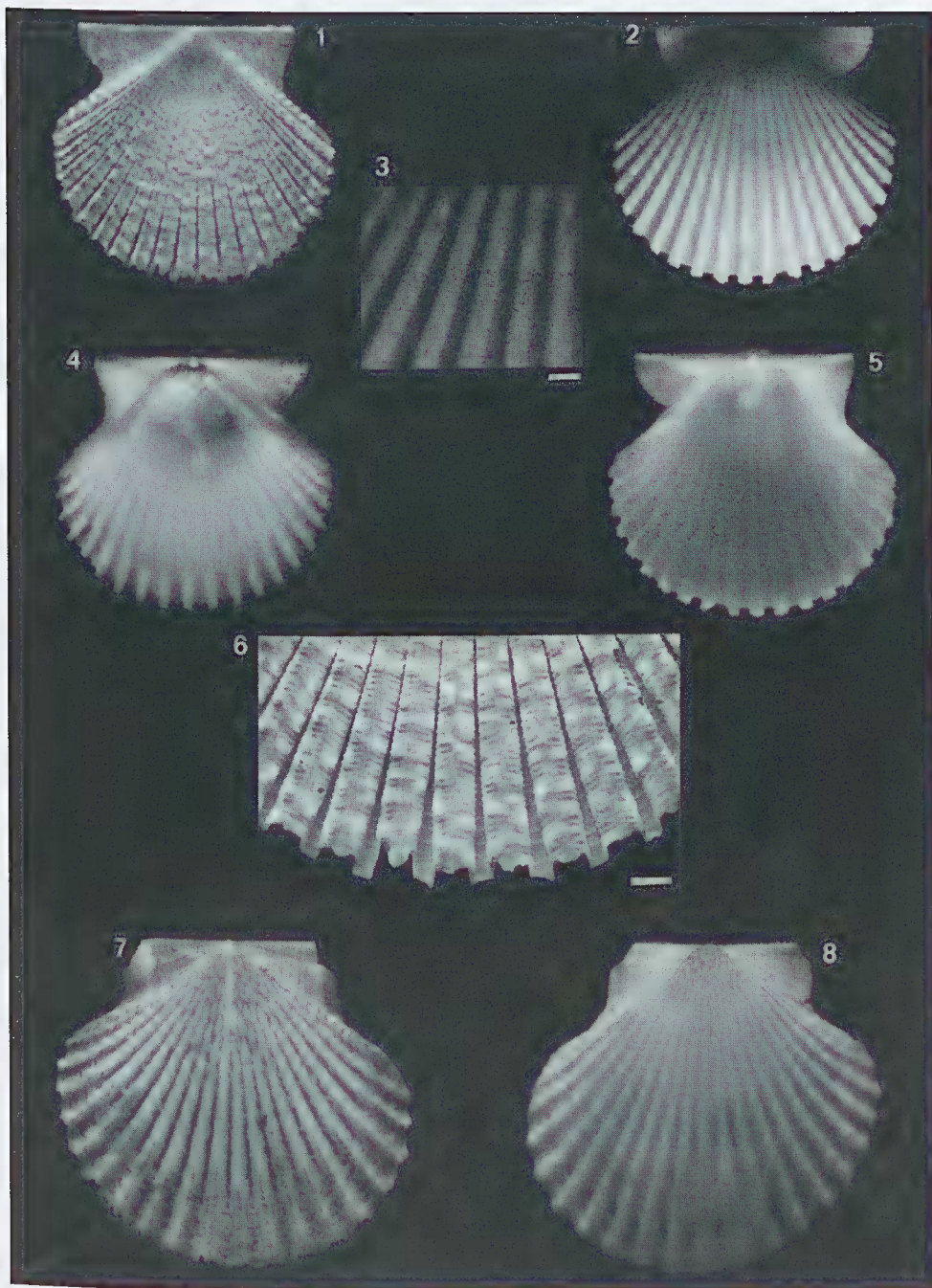


Plate 4.

Figures 1-6. *Serratovola pallula* n. sp. Holotype KBIN 25.955.471, S of Duangit, 60 m, H. 16.8 mm, db. 1. Left valve, exterior. 2. Right valve, exterior. 3. Right valve, exterior, postero-marginal section (scale bar 1 mm). 4. Left valve, interior. 5. Right valve, interior. 6. Left valve, exterior, ventral marginal section (scale bar 1 mm). **7-8.** *Pecten tricarinatus* Anton, 1838. Lectotype SMTD 6937, H 28.9 mm, db. 7. Left valve, exterior. 8. Right valve, exterior.

Remarks: Habe (1951) introduced *Serratovola* as an extant genus, but Hertlein (1969: N367) treated it as a synonym of *Pecten*. *Serratovola* species, however, differ from *Pecten* by a suborbicular shape, subequal auricles, and the hollow sections in the radial costae.

Serratovola pallula n. sp.

(Plate 4, figs. 1-6)

Description: Shell moderately small, up to 17 mm high, inequivalve, equilateral, left valve somewhat concave, right valve convex, auricles nearly equal.

Left valve sculptured with 19 broad angulate radial costae with close interstices near the ventral margin. In early dissoconch stage exterior smooth apart from a few concentric growth lines. Radial ribs with fine interstitial concentric lamellae start ca. 1.5 mm beneath umbonal top. On central dissoconch hollow sections formed on both sides of radial costae, and interstices narrow grooves. Approximately 5 mm above the ventral margin in adults small interstices are exposed, diverging near margin, with concentric lamellae. Anterior auricle somewhat longer (7.8 mm) than posterior one (6.4 mm). Both auricles with fine concentric lamellae and few weak radial riblets, the latter more prominent anteriorly, near disc boundary. Hinge line straight. Outer ligament dark brown.

Right valve sculptured with 20, somewhat rounded, radial costae, which are more angulate near periphery. Ribs are similar to left valve. Interstices wider than on left valve, with addition of concentric lamellae. Auricles with weak radial riblets with overrunning closely arranged concentric irregular lamellae. Hinge line straight with fine spines. Byssal notch rather small. Only one active tooth visible on suture (ctenolium). Resilial insertion triangular.

Left valve dotted creamy-brown on brown, right valve uniform creamy-white.

Type material: Holotype (H 16.8, L 18.0, D 5.9 mm) KBIN 25.955. 471.

Type locality: PAPUA NEW GUINEA: Hansa Bay, S of Duangit, dredged, 60 m, leg. B. Tursch.

Distribution: Papua New Guinea and northern Australia (AMS, QM, WAM) (material under study).

Etymology: The radial costae of the shell are strongly angulate [Lat. *pallula* (substantivum: femininum) = small curtain].

Remarks: *S. pallula* differs from *S. gardineri* (E. A. Smith, 1903), known from the Maldiv Islands, by a more concave left valve. The radial costae of the left valve are angular, that of the latter species more acute. The interstices of the left valve are very small, of *S. gardineri* broad. Interstitial concentric lamellae are not produced in the latter species and the radial ribs near the ventral margin are more rounded rather than angulate. The right valve in *S. pallula* is more convex

and the ribs more closely arranged than in *S. gardineri*, and the hollow sections of the radial costae are somewhat larger. *S. pallula* differs from *S. rubicunda* by more angulate radial costae and smaller interstices of the left valve. The left valve of *S. rubicunda* is slightly convex, that of *S. pallula* concave. Concentric lamellae of *S. rubicunda* are more prominent. Hollow sections of the radial costae of the right valve are absent or much weaker in *S. rubicunda* and the ribs are more rounded near the ventral margin. The left valve of *S. rubicunda* is maculated red rather than spotted.

Material from northwestern and northern Australia (AMS, QM, WAM) is very similar to the type material, although the radial costae are somewhat smaller and the interstices somewhat broader (under study).

Serratovola rubicunda (Recluz in Chenu, 1843)

(Plate 4, figs. 7-8)

Pecten tricarinatus Anton, 1838: 19 (not Defrance, 1825). Philippi, 1845: 99, pl. 1, f. 4. Küster & Kobelt, 1888: 80, pl. 20, f. 4. Dautzenberg & Bavay, 1912: 3.

Pecten asper G. B. Sowerby 2nd, 1842: 50, pl. 19, f. 196-197 (not Lamarck, 1819). Reeve, 1852: sp. 10 [text unpag.], pl. 2, f. 10.

Pecten rubicundus Recluz in Chenu, 1843: 3, pl. 7, f. 4-5 (new name for *P. asper* Sowerby).

Pecten passerinus Hinds, 1845: 61 (new name for *P. asper* Sowerby).

Pecten (Vola) asper Sowerby. Küster & Kobelt, 1888: 238, pl. 63, f. 2-3.

Pecten (Serratovola) tricarinatus Anton. Habe, 1981: 70.

Serratovola tricarinata (Anton). Kuroda & Habe, 1981: 70. Abbott & Dance, 1982: 304, fig.

Serratovola tricarnatus [sic] (Anton). Wang, 1989: 181, pl. 1, f. 3-4.

Type material: Lectotype (H 28.9, L 31.1, D 7.9mm) SMTD 6937, here designated.

Type locality: China.

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1976: 216, Laing Island, dredged, 50-100 m, leg. A. Capart, 31.iii.1976, 1 valve, IG 25.485; PNG 1977, Duangit reef, 45 m, leg. B. Tursch and J. Pierret, 1977, 1 valve, IG 25.930; PNG 1981: 281, Laing Island, E-side, hand-dredged, 50 m, leg. J. Pierret, 12.vi.1981, 2 valves, IG 26.373; off Awar strip, dredged, 75 m, 1 specimen, ex Tursch coll. (HD).

Distribution: Northern Indian Ocean, western and southwestern Pacific. Living on muddy or sandy sediments at littoral to sublittoral depths.

Remarks: The present specimens are similar to the type material of *P. tricarinatus* Anton.

Dijkstra (1991: 49) considered *Serratovola gardineri* (E. A. Smith, 1903) from the Maldivé Islands as a synonym of *P. tricarinatus*. After a recent inspection of the rediscovered type material of *P. tricarinatus* Anton (SMTD), however, it

transpires that *S. gardineri* differs from *P. tricarinatus* by having more prominent, closely arranged, angular radial costae, and fewer radial ribs (18). *S. gardineri* is closest to the new *Serratovola* species described herein.

Subfamily **CHLAMYDINAE** von Teppner, 1922

Tribe **CHLAMYDINI** von Teppner, 1922

Genus **Coralichlamys** Iredale, 1939

Coralichlamys Iredale, 1939: 355.

Type species (by original designation): *Coralichlamys acroporicola* Iredale, 1939 [= *Pecten madreporarum* G.B. Sowerby 2nd, 1842]. Miocene-Recent. Indo-West Pacific.

Remarks: Waller (1993: 199) divided the subfamily into four extant tribes, viz. Chlamydini von Teppner, 1922, Crassadomini Waller, 1993, Mimachlamydini Waller, 1993, and Aequipectinini Waller, 1993. The probable monotypic, coral dwelling genus in the Indo-West Pacific could belong to the Chlamydini (Waller, 1993: 203). This genus is still under study.

Coralichlamys madreporarum (G.B. Sowerby 2nd, 1842)

Pecten madreporarum G.B. Sowerby 2nd, 1842: 68, pl. 14, f. 68.

Coralichlamys madreporarum (Sowerby). Dijkstra, 1991: 32 [synonymy, references, discussion].

Type material: Three syntypes BMNH 1995083.

Type locality: "Red Sea". Reeve (1853: spec. 117) mentioned this species only from "Java".

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: 1978, Mililat, in situ on *Acropora* spec., leg. J. Pierret and D. Zimmermann, 1978, 1 specimen, IG 25.930.

Distribution: Throughout the Indo-W. Pacific, from southern Japan to New Caledonia. Living embedded between branches of *Acropora* in the littoral.

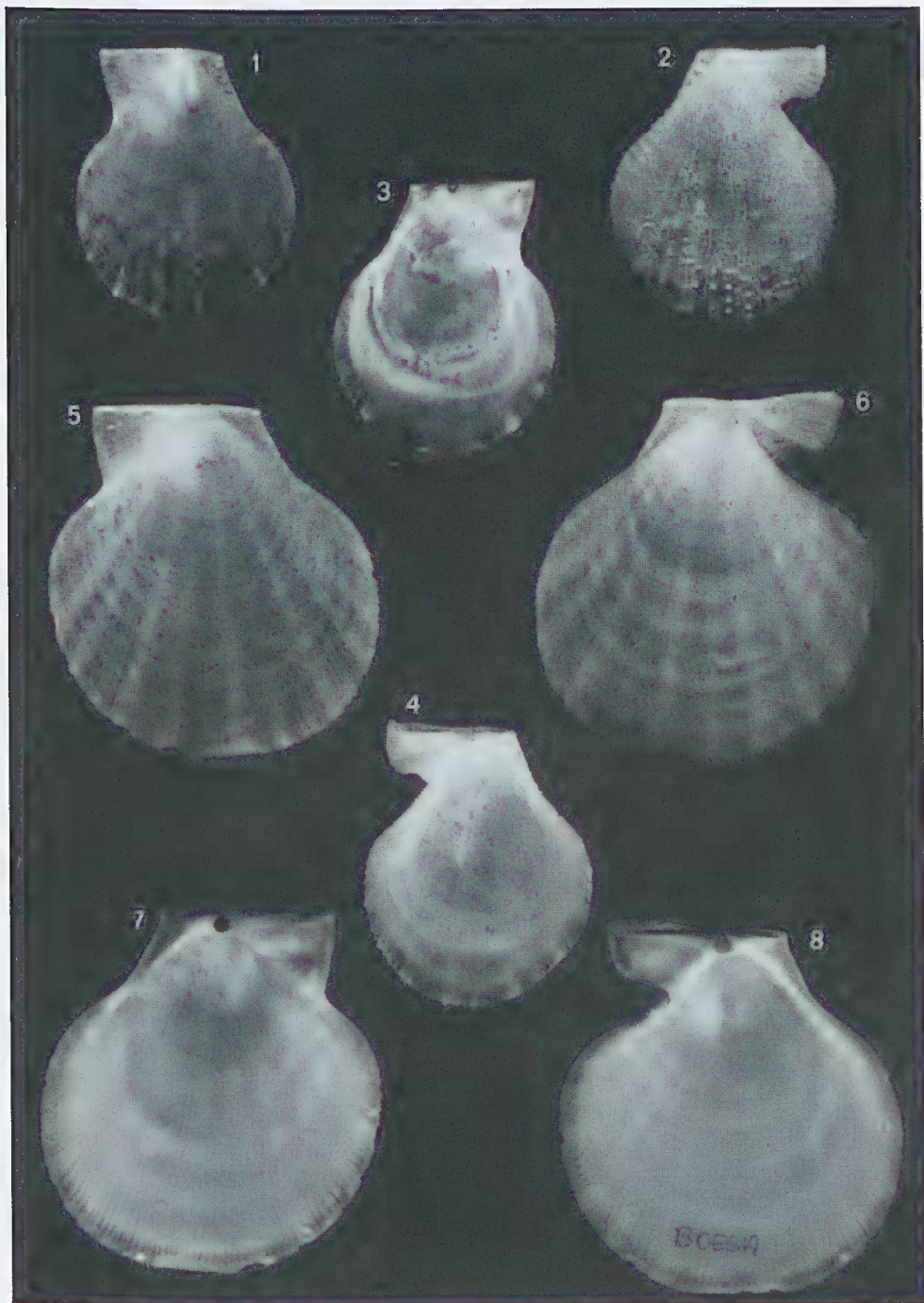
Genus **Laevichlamys** Waller, 1993

Laevichlamys Waller, 1993: 204.

Type species (by original designation): *Pecten multisquamatus* Dunker, 1864; Recent, tropical western Atlantic.

Laevichlamys andamanica (Preston, 1908)

Chlamys andamanica Preston, 1908: 204, pl. 14, f. 19. Dijkstra, 1991: 29, f. 90 [synonymy, references, discussion].

**Plate 5.**

Figures 1-4. *Laevichlamys irregularis* (Sowerby, 1842). HD, Laing Island, H 20.1 mm, db. 1. Left valve, exterior. 2. Right valve, exterior. 3. Left valve, interior. 4. Right valve, interior.

5-8. *Laevichlamys mollita* (Reeve, 1853). HD, Boesa Island, H 44.0 mm, db. 5. Left valve, exterior. 6. Right valve, exterior. 7. Left valve, interior. 8. Right valve, interior.

Type material: Holotype ZSI M4042/1.

Type locality: Andaman Islands.

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1980: 5, Nagada (N of Madang), Tab Island, dredged, 10 m, leg. J. Pierret, 30.VIII.1979, 1 valve, IG 26.086.

Distribution: Northern Indian Ocean and Indo-West Pacific. Living on sandy bottoms amongst coral rubble in the littoral.

Remarks: The present specimen is more suborbicular in shape than the type specimen, which is more elongate. Intermediate variations, however, are also observed (MNHN, ZSI).

Laevichlamys irregularis (G. B. Sowerby 2nd, 1842)
(Plate 5, figs. 1-4)

Pecten irregularis G. B. Sowerby 2nd, 1842: 69, pl. 13, f. 51-52.

Chlamys irregularis (Sowerby). Dijkstra, 1991: 31 [synonymy, references, discussion].

Type material: Holotype BMNH 1950.11.14.39.

Type locality: "Eastern Seas" [= Indo-West Pacific].

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1979: 45A, Mililat (N of Madang), Kerry Ann N, small reef, sandy mud, hand-dredged, 25 m, leg. J. Pierret, 14.III.1979, 1 live specimen, IG 26.080; PNG 1979, Wanginem E, under coral slabs, 7-10 m, leg. J. Pierret, 7.VII.1979, 1 live specimen, IG 26.086; PNG 1979: 66, Nagada (N of Madang), Tab reef, top of reef, 3 m, leg. J. Pierret, 12.XI.1979, 2 live specimens, IG 26.086; PNG 1980: 278, Legoarant Island (Madang prov.), N Island, diving, hand-dredged, 20-30 m, leg. J. Pierret, 9.VI.1979, 1 valve, IG 26.080; PNG 1980: 314, Legoarant Island (Madang prov.), S Island, diving, hand-dredged, 10-12 m, leg. D. Christensen, 13.VI.1979, 1 valve, IG 26.080; PNG 1980: 343, Duangit reef (Madang prov.), hand-dredged, 25-32 m, leg. J. Pierret, 17.VI.1979, 1 valve, IG 26.080; PNG 1980, Laing Island J5, 5 m, leg. J. Pierret, VII.1979, 1 specimen, IG 26.086; PNG 1980, Purar reef, shallow water, leg. J. Pierret, VII.1979, 1 specimen, IG 26.086; PNG 1980, Duangit W, 5 m, leg. J. Pierret, 2.VII.1979, 2 valves, IG 26.086; PNG 1980: 5, Nagada (N of Madang), Tab Island, dredged, 10 m, leg. J. Pierret, 30.VIII.1979, 7 valves, IG 26.086; PNG 1980: 21, Manam, Borda reef, under coral, 10 m, leg. J. Pierret, 16.VIII.1980, 1 live specimen, IG 26.253; PNG 1980: 197, Nubia, dredged, 10-20 m, leg. B. Tursch and J. Pierret, 1 specimen, IG 26.132; PNG 1981: 3, Purar reef, 8-10 m, leg. J. Pierret, 9.VII.1980, 1 specimen, IG 26.253; PNG 1981: 5, Purar reef, 8-10 m, leg. J. Pierret, 10.VII.1980, 1 specimen, IG 26.253; PNG 1981: 12, SE Duangit, dredged, 50-52 m, leg. J. Pierret, 21.XI.1980, 1 valve, IG 26.227; PNG

1981: 379, on top of wreck, 20 m, leg. J. Pierret, 26.VI.1981, 1 live specimen, IG 26.373; Laing Island, Bi-263, 2 specimens, ex Tursch coll. (HD).

Distribution: Throughout the Indo-West and central Pacific. Byssally attached under coral slabs or amongst coral rubble on sandy or muddy sediments at littoral to sublittoral depths.

Laevichlamys mollita (Reeve, 1853)
(Plate 5, figs. 5-8)

Pecten mollitus Reeve, 1853: text unpag., sp. 100, pl. 25, f. 100.

Chlamys mollita (Reeve). Kira, 1960: 121, pl. 18, f. 8. Dijkstra, 1983: 5, figs.

Type material: Two syntypes BMNH 1995081. The largest specimen in the type lot labelled "Celebes" does not belong to the type series.

Type locality: Japan.

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: Boesa Island, W5, 1 specimen, ex Tursch coll. (HD).

Distribution: Indo-West Pacific. Living byssally attached under coral boulders or amongst coral rubble on sandy sediments in the littoral.

Remarks: The present specimen is similar to the type material, although more brightly coloured. Material examined (HD, ZMA) are very variable of colour. Juveniles of *L. mollita* could be easily confused with *L. irregularis*, which has irregularly arranged radial riblets, and *L. aliae* (Dijkstra, 1988), which is more oblong and has less radial riblets than *L. mollita*.

Laevichlamys squamosa (Gmelin, 1791)
(Plate 6, figs. 1-4)

Ostrea squamosa Gmelin, 1791: 3319.

Chlamys squamosa (Gmelin). Dijkstra, 1991: 31 [synonymy, references, discussion].

Type material: Lectotype BMNH (Sloane coll.), designated by Dijkstra (1991: 32).

Type locality: Unknown. Here designated to Queensland, Australia. Specimens from that region are very similar to the type specimen (AMS, HD, ZMA).

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1980, Mililat 35B (N of Madang), N of small reef, hand-dredged, 12-15 m, leg. J. Pierret, 5.III.1979, 1 valve, IG 26.080; PNG 1980: 9, Nagada (N of Madang), Tab reef, dredged, 20 m, leg. J. Pierret, 1.IX.1979, 1 valve, IG 26.086; PNG 1980: 12, Nagada (N of Madang), Wongat reef, 5 m, leg. J. Pierret, 2.IX.1979, 1 valve,

IG 26.086; PNG 1980: 15, Nagada (N of Madang), Wongat reef, dredged, 25-30 m, leg. J. Pierret, 4.IX.1979, 1 specimen, IG 26.086; PNG 1980: 18, Nagada (N of Madang), Wongat reef, dredged, 25-30 m, leg. J. Pierret, 6.IX.1979, 1 specimen, IG 26.086; PNG 1980: 30, Nagada (N of Madang), Gosem Island, dredged, 20 m, leg. J. Pierret, 17.IX.1979, 1 valve, IG 26.086; PNG 1980: 38, Nagada (N of Madang), Wongat reef, dredged, 25 m, leg. J. Pierret, 22.IX.1979, 1 valve, IG 26.086; PNG 1980: 48, Nagada (N of Madang), Gosem reef n° 3, 3-5 m, leg. J. Pierret, 30.X.1979, 1 specimen, IG 26.086; PNG 1980: 61, Nagada (N of Madang), N of Wongat reef, dredged, 25 m, leg. J. Pierret, 9.XI.1979, 1 valve, IG 26.086; PNG 1980: 75, Nagada (N of Madang), Tab reef, 10 m, leg. J. Pierret, 20.XI.1979, 1 specimen, IG 26.086; Laing Island, 1 specimen, ex Tursch coll. (HD).

Distribution: Throughout the Indo-West Pacific. Living byssally attached to rocks and corals, or in sandy or muddy sediments in the littoral.

Genus *Pedum* Lamarck, 1799

Pedum Lamarck, 1799: 88.

Type species (designation by monotypy): *Ostrea spondyloidea* Gmelin, 1791. Recent. Indo-West Pacific.

Pedum spondyloideum (Gmelin, 1791)

Ostrea spondyloidea Gmelin, 1791: 3335.

Pedum spondyloideum (Gmelin). Dijkstra, 1991: 40 [synonymy, references].

Type material: Holotype ZMUC BIV-57.

Type locality: India.

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: Laing Island, in cavities in *Porites*; Hansa Bay, Laing Island, 1 live specimen, ex Tursch coll. (HD).

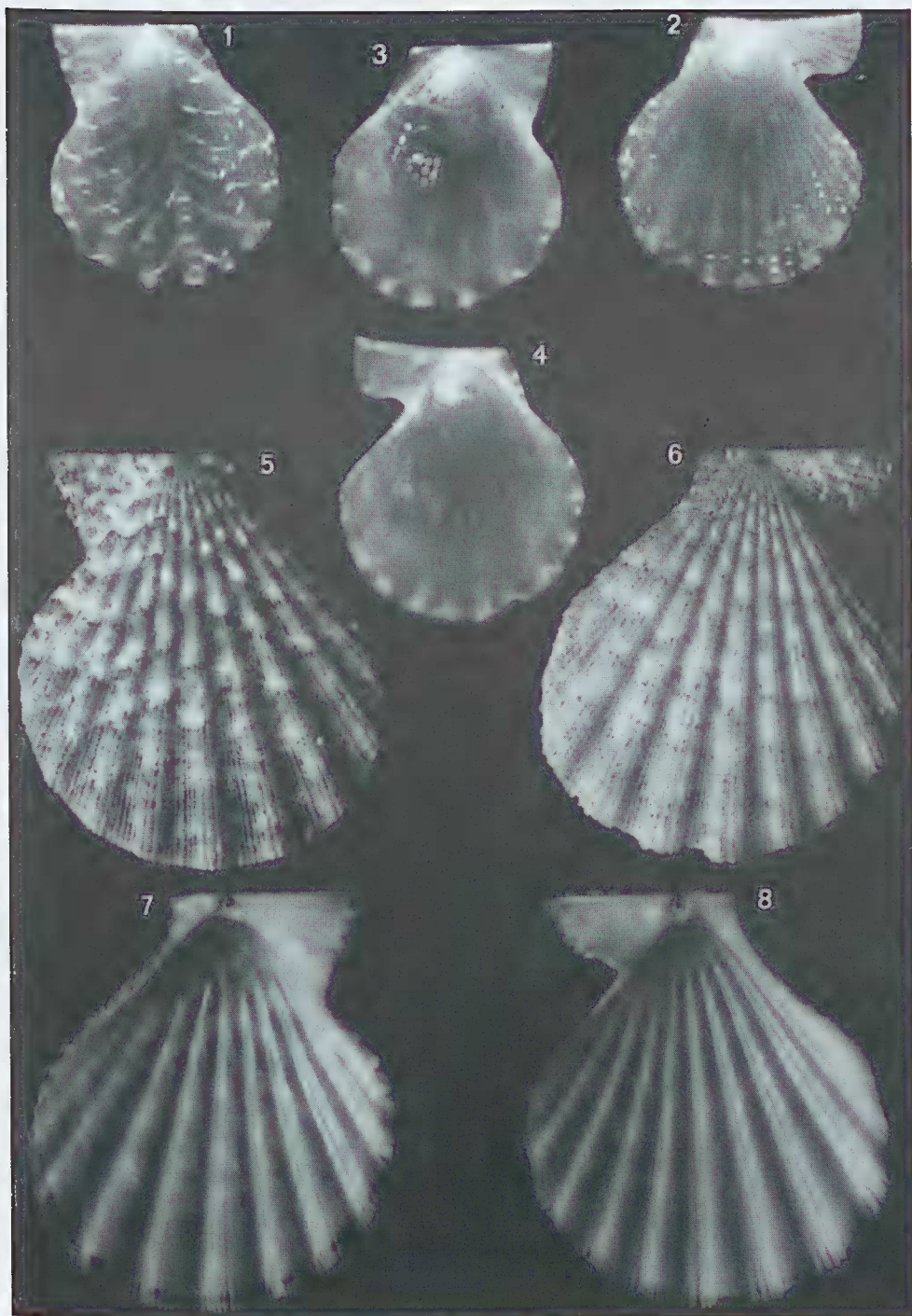
Distribution: Throughout the Indo-Pacific. Living in cavities of massive heads of coral *Porites lutea* Milne-Edwards and Haime in the littoral.

Remarks: The present specimen is similar to the type material. Material examined (AMS, BMNH, KBIN, MNHN, NNM, WAM, ZMA, ZMUC) is very variable in shape, due to development in cavities in *Porites*. For further information on morphology, ecology and distribution see Yonge (1967), Waller (1972) & Kleemann (1990).

Genus *Semipallium* [Jousseaume] Lamy, 1928

Semipallium [Jousseaume] Lamy, 1928: 169.

Type species (by original designation): *Pecten tigris* Lamarck, 1819. Miocene-Recent. Indo-West Pacific (Hayami, 1989: 16).

**Plate 6.**

Figures 1-4. *Laevichlamys squamosa* (Gmelin, 1791). HD, Laing Island, H 15.8 mm, juvenile db. 1. Left valve, exterior. 2. Right valve, exterior. 3. Left valve, interior. 4. Right valve, interior. **5-8.** *Semipallium diana* (Crandall, 1979). HD, Laing Island, H 48.9 mm, db. 5. Left valve, exterior. 6. Right valve, exterior. 7. Left valve, interior. 8. Right valve, interior.

Semipallium barnetti Dijkstra, 1988
(Plate 7, fig. 1)

Semipallium barnetti Dijkstra, 1988: 16, figs.

Type material: Holotype ZMA Moll. 388044.

Type locality: Off Punta Engano, Magellan Bay, Mactan Island, Cebu, Philippines.

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1979: 9, Nagada (N of Madang), Tab reef, dredged, 20 m, leg. J. Pierret, 1.ix.1979, 1 valve, IG 26.086; PNG 1979: 11, Nagada (N of Madang), Wongat reef, dredged, 30 m, leg. J. Pierret, 2.ix.1979, 1 valve, IG 26.086; PNG 1979: 43B, Mililat (N of Madang), small reef, hand-dredged, 25 m, leg. J. Pierret, 12.iii.1979, 1 specimen, IG 26.080; PNG 1979: 46, Nagada (N of Madang), Wongat reef, coral sand, dredged, 25-30 m, leg. J. Pierret, 29.x.1979, 1 live specimen, IG 26.086; PNG 1979: 52, Nagada (N of Madang), Wongat reef, coral sand, dredged, 5-20 m, leg. J. Pierret, 3.xi.1979, 1 live specimen, IG 26.086; PNG 1979, Laing Island, Besarpap reef, dredged, 40-45 m, leg. J. Pierret, 8.xii.1979, 1 specimen, IG 26.370; PNG 1980: 42, Laing Island, C1, before channel, dredged, 25-35 m, leg. J. Pierret, 24.ix.1980, 2 valves, IG 26.253; PNG 1981: 392, Wanginem reef, hand-dredged, 43 m, leg. J. Pierret, 28.v.1981, 1 valve, IG 26.373.

Distribution: Southwestern Pacific, from the Philippines, Indonesia, Papua New Guinea to the Solomon Islands. Living amongst coral rubble on sandy sediments at littoral to sublittoral depths.

Remarks: The present specimens are similar to the type material. Material examined (HD, KBIN, ZMA) the secondary radial riblets are somewhat variable in number. Juveniles could easily be confused with *Semipallium dringi* (Reeve, 1853) and *Semipallium fulvicostatum* (A. Adams & Reeve, 1850).

Semipallium diana (Crandall, 1979)
(Plate 6, figs. 5-8)

Chlamys diana Crandall, 1979: 114, f. 3-8.

Semipallium diana (Crandall). Dijkstra, 1991: 38 [references, discussion].

Type material: Holotype TMMT 7911.

Type locality: Ryukyu Islands, Japan.

Material examined: The type material. PAPUA NEW GUINEA: Hansa Bay, Laing Island, 1 specimen, ex Tursch coll. (HD).

Distribution: Western and southwestern Pacific. Living attached or free 'swimming' amongst coral rubble on sand in the littoral.

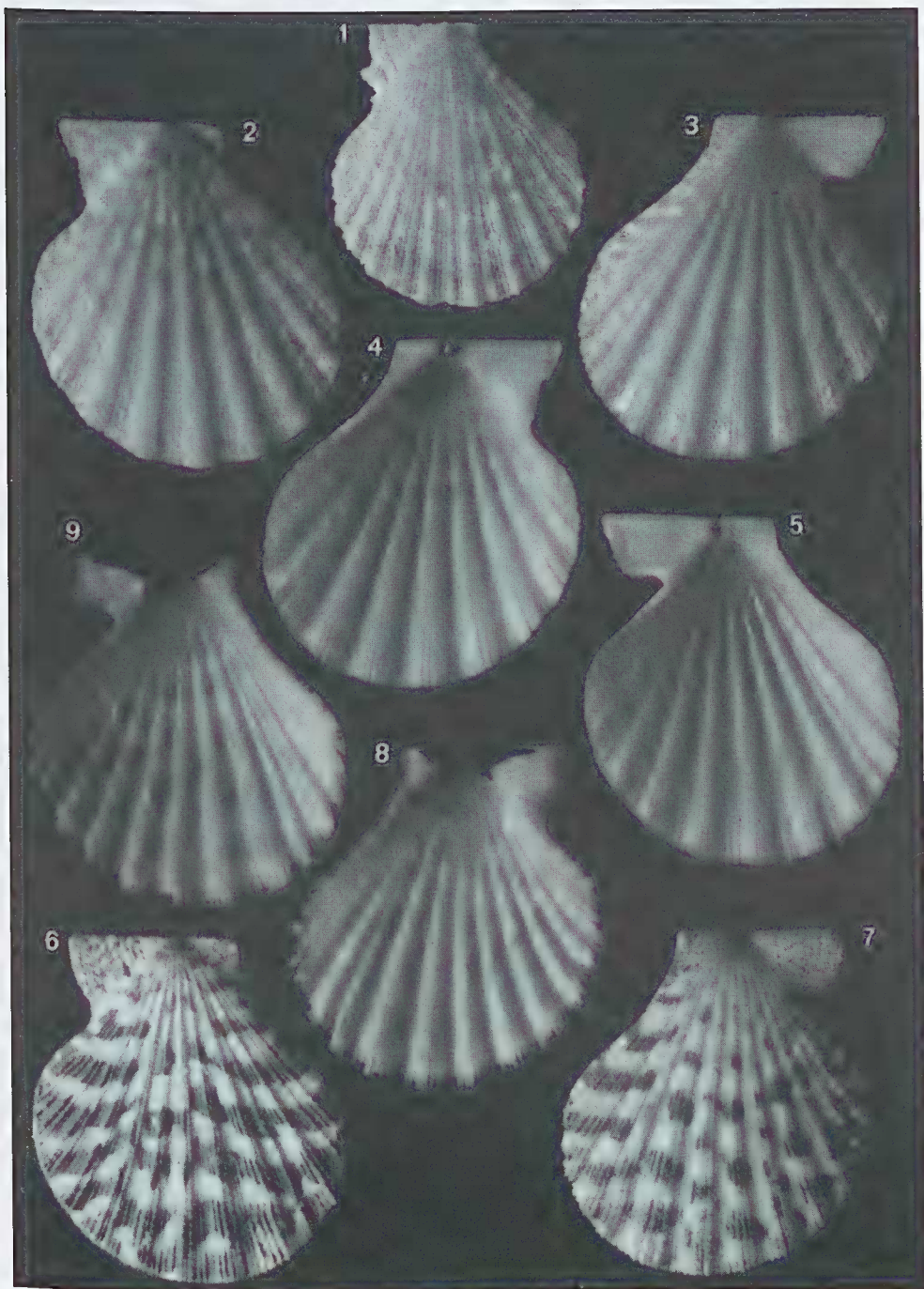


Plate 7.

Figure 1. *Semipallium barnetti* Dijkstra, 1988. KBIN, Mililat, 25 m, H 18.0 mm, lv. 2-5. *Semipallium fulvicostatum* (Adams and Reeve, 1850). KBIN, Purar reef, 10m, H 31.0 mm, db. 2. Left valve, exterior. 3. Right valve, exterior. 4. Left valve, interior. 5. Right valve, interior. 6-9. *Semipallium tigris* (Lamarck, 1819). HD, Laing Island, H 39.0 mm, db. 6. Left valve, exterior. 7. Right valve, exterior. 8. Left valve, interior. 9. Right valve, interior.

Remarks: The present specimen is similar to the type material, although the coloration of the present specimen is somewhat darker and the radial riblets on the primary costae are developed earlier.

Semipallium fulvicostatum (A. Adams & Reeve, 1850)
(Plate 7, figs. 2-5)

Pecten fulvicostatus A. Adams & Reeve, 1850: 74, pl. 21, f. 11.

Semipallium fulvicostatum (Adams & Reeve). Dijkstra, 1991: 38 [synonymy, references, discussion].

Type material: Holotype BMNH 1950.11.14.31.

Type locality: "Sooloo Archipelago" [= Sulu Archipelago, Philippines].

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1976, H3, trawled, leg. B. Tursch and J. Pierret, x.1976, 1 valve, IG 26.132; PNG 1976: 223, Laing Island, dredged, 20 m, leg. A. Capart, 2.iv.1976, 1 valve, IG 25.485; PNG 1977: 182, Laing Island, outside reef, hand-dredged, leg. J. Van Goethem, 23.v.1977, 1 valve, IG 25.681; PNG 1980, Laing Island, E1, leg. J. Pierret, v.1980, 2 valves, IG 26.253; PNG 1980:58, NE Duangit, dredged, 40 m, leg. J. Pierret, 21.x.1980, 1 valve, IG 26.253; PNG 1980: 69, Purar reef, 10 m, leg. J. Pierret, 29.x.1980, 1 specimen, IG 26.253.

Distribution: Throughout the western and southwestern Pacific to French Polynesia. Living attached under coral slabs, amongst coral rubble on sand at littoral to sublittoral depths.

Semipallium tigris (Lamarck, 1819)
(Plate 7, figs. 6-9)

Pecten tigris Lamarck, 1819: 171.

Semipallium tigris (Lamarck). Dijkstra, 1991: 40 [references, discussion]. Dijkstra, 1994: 482, f. 70-74 [additional references and discussion].

Type material: Lectotype MNHN, designated by Dijkstra (1994: 483).

Type locality: "l'Océan indien?"

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1976, Laing Island, dredged, 30 m, leg. J. Pierret, vii.1979, 2 specimens, IG 26.086; PNG 1979: 22, Nagada (N of Madang), Tab reef, 3-5 m, leg. J. Pierret, 11.ix.1979, 1 valve, IG 26.086; PNG 1979: 48, Nagada (N of Madang), Gosem reef 3, coral, 3-5 m, leg. J. Pierret, 30.x.1979, 1 live specimen, IG 26.086; PNG 1979: 58, Nagada (N of Madang), Great Gosem reef, 3 m, leg. J. Pierret, 7.xi.1979, 1 valve, IG 26.086; PNG 1979: 64, Nagada (N of Madang), Gosem reef, 3 m, leg. J. Pierret, 10.xi.1979, 1 live specimen, IG 26.086; PNG 1979: 66, Nagada (N of Madang), Tab

reef, under reef, 3 m, leg. J. Pierret, 12.xi.1979, 1 live specimen, IG 26.086; PNG 1980: 69, Purar reef, 10 m, leg. J. Pierret, 29.x.1980, 1 specimen, IG 26.253; Laing Island, B1-198, 2 specimens, ex Tursch coll. (HD).

Distribution: Throughout the Indo-Pacific. Living byssally attached under coral boulders or amongst coral rubble on sand in the littoral.

Remarks: The present specimens are similar to the type material, although the specimens from the Hansa Bay have one or two more radial costae and the concentric lamellae between the radial ribs on the left valve are more prominent. Intermediate variations, however, were also examined (AMS, BMNH, HD, KBIN, MNHN, NNM, ZMA).

Tribe **MIMACHLAMYDINI** Waller, 1993

Genus **Mimachlamys** Iredale, 1929

Mimachlamys Iredale, 1929: 162.

Type species (by original designation): *Pecten asperrimus* Lamarck, 1819; Eocene-Recent (Waller, 1991: 32), eastern Atlantic and Indo-West Pacific.

Mimachlamys albolineata (G. B. Sowerby 2nd, 1842)

(Plate 8, figs. 1-3)

Pecten albolineatus G. B. Sowerby 2nd, 1842: 73, pl. 14, f. 69, 70. *Mimachlamys albolineata* (Sowerby). Dijkstra, 1991: 33 [references].

Type material: Three possible syntypes BMNH, not registered.

Type locality: Guimaras Island, Philippines.

Material examined: The possible type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1979: 27, Laing Island (Madang prov.), N reef flat, low tide, underside coral boulders, leg. J. Van Goethem, 18.V.1979, 1 live specimen, IG 26.080; PNG 1979: 75, Laing Island, E-side reef flat, low tide, underside coral boulders, leg. J. Van Goethem, 23.V.1979, 1 live specimen, IG 26.080; PNG 1979: 112, Laing Island, N reef flat, low tide, underside coral boulders, leg. J. Van Goethem, 26.V.1979, 1 live specimen, IG 26.080; PNG 1980: 2, Nagada (N of Madang), Rash reef, dredged, 25 m, leg. J. Pierret, 29.VIII.1979, 1 valve, IG 26.086; PNG 1981: 400, Tobinam Point, reef flat, low tide, under coral boulders, leg. J. Van Goethem et al., 29.VI.1981, 1 live specimen, IG 26.373; PNG 1981: 466, Chirimosh Island, reef flat, low tide, underside coral boulders in intertidal zone, leg. J. Van Goethem et al., 2 live specimens, IG 26.373; PNG 1981: 475, Ulingan harbour, E-side, small reef flat inside bay, very low tide, leg. J. Van Goethem and M. Magap, 16.VII.1981, 1 specimen, IG 26.373.

Distribution: Throughout the Indo-West Pacific and northeastern Indian Ocean. Living byssally attached to corals or amongst coral rubble on sand or mud in the littoral.

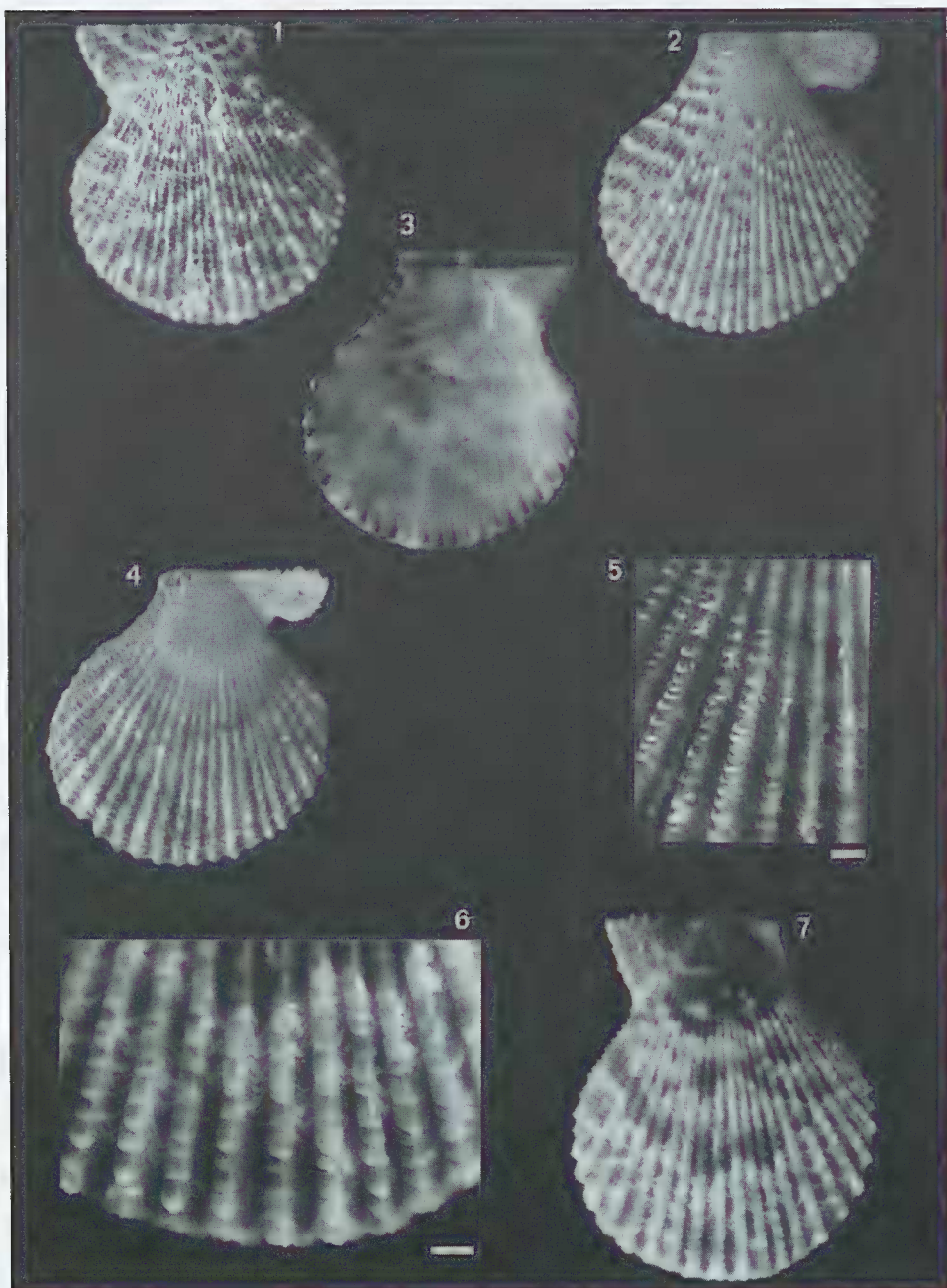


Plate 8.

Figures 1-3. *Mimachlamys albolineata* (Sowerby, 1842). KBIN, Ulingan harbour, H 18.1 mm, db. 1. Left valve, exterior. 2. Right valve, exterior. 3. Left valve, interior. **4-5.** *Mimachlamys cloacata* (Reeve, 1853). KBIN, Laing Island, 25-30 m, H 18.0 mm, rv. 4. Right valve, exterior. 5. Right valve, exterior, postero-marginal section (scale bar 1 mm). **6-7.** *Mimachlamys lentiginosa* (Reeve, 1853). KBIN, W Laing Island, 18-20 m, H 21.9 mm, lv. 6. Left valve, exterior, ventral marginal section (scale bar 1 mm). 7. Left valve, exterior.

Mimachlamys cloacata (Reeve, 1853)

(Plate 8, figs. 4-5)

Pecten cloacatus Reeve, 1853: sp. 166, pl. 34, f. 166.*Chlamys cloacata* (Reeve). Dijkstra, 1991: 29 [synonymy, references, discussion].*Type material*: Lectotype (H 27.0, L 24.5, D 11.2 mm) BMNH 1995158.1, and paralectotype BMNH 1995158.2 here designated.*Type locality*: Philippines.*Material examined*: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1979: 9, Nagada, 20 m, leg. J. Pierret, 1.ix.1979, 1 valve, IG 26.086; PNG 1980: 24, Laing Island, 35 m, leg. J. Pierret, 22.viii.1980, 1 valve, IG 26.253; PNG 1980: 44, Laing Island, 25-30 m, leg. J. Pierret, 25.ix.1980, 1 valve, IG 26.253.*Distribution*: Throughout the western and southwestern Pacific. Living amongst rubble and seaweeds on sand or muddy sand sediments at littoral to sublittoral depths.*Remarks*: The present specimens are similar to the type material, although smaller of size (c. 20 mm) with a few more radial costae (20 ribs, typical 18). Intermediate variations are also observed with 16 to 22 ribs (HD, NNM, ZMA) from the Philippines and Indonesia. Live material was not collected from the Hansa Bay.*Mimachlamys lentiginosa* (Reeve, 1853)

(Plate 8, figs. 6-7)

Pecten lentiginosus Reeve, 1853: sp. 76, pl. 20, f. 76.*Mimachlamys lentiginosa* (Reeve). Dijkstra, 1991: 33 [synonymy, references, discussion].*Type material*: Three syntypes BMNH 1950.11.14.40-42.*Type locality*: Ticao Island, Philippines, under stones at low water.*Material examined*: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1979: 258, Laing Island, W-side, hand-dredged, 18-20 m, leg. D. Christensen, 6.VI.1979, 1 valve, IG 26.080.*Distribution*: Throughout the Indo-West Pacific. Living byssally attached to rocks or corals on sandy or muddy sand sediments in the littoral.*Remarks*: The present specimen is similar to the type material, although paler in colour. Juveniles of *M. lentiginosa* could easily be confused with *M. albolineata*. The latter species has a few more radial costae, lacks the red spot on the

umbonal top and is more whitish inside and dark-brown to black near the dorsal and ventral margins.

Mimachlamys senatoria (Gmelin, 1791)

Ostrea senatoria Gmelin, 1791: 3327 (based on Chemnitz, 1784: 320, pl. 65, f. 617).
Mimachlamys senatoria (Gmelin). Dijkstra & Marshall, 1997: 101 [synonymy, references, type data].

Type material: Lectotype ZMUC BIV-45, designated by Dijkstra & Marshall (1997: 102).

Type locality: "Oceano indico" [= Indian Ocean].

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1979: 9, Nagada (N of Madang), Tab reef, sand, dredged, 20 m, leg. J. Pierret, 1.IX.1979, 1 live specimen, IG 26.086; PNG 1979: 326, Nubia village, diving, hand-dredged, 10-12 m, leg. J. Pierret, 15.VI.1979, 1 live specimen, IG 26.080.

Distribution: Throughout the Indo-Pacific. Living byssally attached to rocks, corals, or amongst coral rubble on sandy or muddy sand sediments in the littoral.

Tribe AEQUIPECTININI Nordsieck, 1969

Genus *Cryptopecten* Dall, Bartsch & Rehder, 1938

Cryptopecten Dall, Bartsch & Rehder, 1938: 93.

Type species (by original designation): *Cryptopecten alli* Dall, Bartsch & Rehder, 1938 [= *Pecten* (*Chlamys*) *bullatus* Dautzenberg & Bavay, 1912]. Miocene-Recent. Indo-West Pacific (Hayami, 1989: 15).

Cryptopecten nux (Reeve, 1853)

Pecten coruscans Hinds. Reeve, 1853: text unpag., pl. 32, f. 143 (see errata) (not Hinds, 1845).

Pecten nux Reeve, 1853: see errata.

Cryptopecten nux (Reeve). Dijkstra & Marshall, 1997b: 107 [synonymy, references, type data, discussion].

Type material: Lectotype BMNH 1950.11.14.50, designated by Wagner (1989: 53, f. 6-7).

Type locality: Panglas, Bohol, Philippines; designated by Wagner (1989).

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1976, Duangit 9 + 10, leg. J. Bouillon et al., 1976, 1 valve, IG 25.715; PNG

1976: H3, Awar, trawled, 21 m, leg. B. Tursch and J. Pierret, 1976, 1 live specimen, IG 26.132; PNG 1976, NW Duangit, trawled, 60-65 m, leg. B. Tursch and J. Pierret, 1976, 2 live specimens, IG 26.132; PNG 1976, SE Duangit, trawled, 60 m, leg. B. Tursch and J. Pierret, 1976, 1 valve, IG 26.132; PNG 1976, E Duangit, trawled, 24-63 m, leg. B. Tursch and J. Pierret, 1976, 2 live specimens, IG 26.132; PNG 1976, Duangit, leg. B. Tursch and J. Pierret, 30.viii.1976, 1 live specimen, IG 26.132; PNG 1977, Laing Island, Duangit reef, 45 m, leg. B. Tursch and J. Pierret, 1977, many valves, IG 25.930; PNG 1978, N Duangit (20), dredged, 45-60 m, leg. B. Tursch, 1978, many valves, IG 25.955; PNG 1979, N Duangit (31), dredged, 45-60 m, leg. B. Tursch, 1978, 2 specimens, IG 25.955; PNG 1979: 12, leg. B. Tursch, 1978, 1 specimen, IG 25.955; PNG 1979: 18, Nagada (N of Madang), Wongat reef, dredged, 25-30 m, leg. J. Pierret, 6.ix.1979, 1 valve, IG 26.086; PNG 1979: 58, NE-end of Laing Island (Madang prov.), coral sand, hand-dredged, 30-35 m, leg. J. Pierret, 21.v.1979, 1 live specimen, IG 26.080; PNG 1980: C1, Laing Island, dredged, 30 m, leg. J. Pierret, 29.v.1980, 1 valve, IG 26.253; PNG 1980: H1, Laing Island, dredged, 12-15 m, leg. J. Bouillon, 20.xii.1980, 1 valve, IG 26.370; PNG 1980: 29, Laing Island J2, sand, coral rubble, dredged, 30-35 m, leg. J. Pierret, 6.ix.1980, 1 live specimen, IG 26.253; PNG 1980: 32, Mililat (N of Madang), barrier reef, hand-dredged, 10-18 m, leg. J. Pierret, 25.ii.1980, 1 specimen, IG 26.080; PNG 1980: 62, Potsdam PL, dredged, 35-52 m, leg. J. Pierret, 24.x.1980, 1 specimen, IG 26.253; PNG 1980: 87, Hansa Bay, SE Duangit, dredged, 50-52 m, leg. J. Pierret, 1980, 1 valve, IG 26.227; PNG 1980: 117, Duangit reef, E-side, hand-dredged, 40-46 m, leg. J. Pierret, 27.v.1980, 1 valve, IG 26.080; PNG 1980: 419, Duangit reef, E-side, diving, hand-dredged, 48 m, leg. J. Pierret, 23.vi.1980, several valves, IG 26.080; PNG 1981: 36, SE Duangit, dredged, 52 m, leg. J. Pierret, 17.ix.1980, 1 specimen, IG 26.253; PNG 1981: 39, E Duangit, leg. J. Pierret, 21.ix.1980, 1 specimen, IG 26.253; PNG 1981: 40, E Duangit, dredged, 50 m, leg. J. Pierret, 22.ix.1980, 1 valve, IG 26.253; PNG 1981: 52, Wanginem reef 2, dredged, 40 m, leg. J. Pierret, 11.x.1980, 1 specimen, IG 26.253; PNG 1981: 61, SE Wanginem 2, dredged, 40 m, leg. J. Pierret, 23.x.1980, 1 valve, IG 26.253; PNG 1981: 70, NE Duangit, dredged, 50-52 m, leg. J. Pierret, 30.x.1980, 1 valve, IG 26.253; PNG 1981: 77, SE Laing Island, dredged, 45 m, leg. J. Pierret, 21.xi.1980, 2 valves, IG 26.227; PNG 1981, SE Duangit, dredged, 50 m, leg. J. Pierret, 21.xi.1980, 1 specimen, IG 26.227; PNG 1981: 83, NE Duangit, dredged, 50 m, leg. J. Pierret, 4.xii.1980, 2 valves, IG 26.227; PNG 1981: 85, NE Duangit, dredged, 50 m, leg. J. Pierret, 6.xii.1980, 1 valve, IG 26.227; PNG 1981: 89, NE Duangit, coral colonies, dredged, 40 m, leg. J. Pierret, 9.xii.1980, 2 valves, IG 26.227; PNG 1981: 181, Wanginem reef, coral sand with some mud, hand-dredged, 43 m, leg. J. Pierret, 28.v.1981, 2 live specimens + many valves, IG 26.373; PNG 1981: 189, NW Duangit reef, hand-dredged, 50 m, leg. J. Pierret, 29.v.1981, many valves, IG 26.373; PNG 1981: 233, NE Duangit reef, hand-dredged, 45-50 m, leg. J. Pierret, 3.vi.1981, 1 specimen, IG 26.373; PNG 1981: 392, hand-dredged, 57 m, leg. J. Pierret, 28.vi.1981, 1 valve, IG 26.373; Laing Island, 1 live specimen, ex Tursch coll. (HD); off Awar strip, dredged, 75 m, 5 live specimens, ex Tursch coll. (HD).

Distribution: Throughout the Indo-Pacific. Living amongst coral rubble or in muddy or sandy sediments at littoral to bathyal depths.

Genus *Haumea* Dall, Bartsch & Rehder, 1938

Haumea Dall, Bartsch & Rehder, 1938: 86.

Type species (by original designation): *Haumea juddi* Dall, Bartsch & Rehder, 1938 [= *Pecten loxoides* G. B. Sowerby 2nd, 1882]. Recent. Indo-West Pacific.

Haumea rehderi (Grau, 1960)

(Plate 9, figs. 1-4)

Chlamys (*Argopecten*) *rehderi* Grau, 1960: 15, pl. 2, f. 1-3.

Pecten (*Aequipecten*) *aequisulcatus* Carpenter. Dautzenberg & Bavay, 1912: 19 (not *P. aequisulcatus* Carpenter, 1864).

Argopecten rehderi (Grau). Dijkstra, 1988: 3, figs. ;1989: 2, 12, figs.

Chlamys (*Argopecten*) *rehderi* Grau. Dijkstra, 1990: 11, pl. 2, f. 16-17.

Type material: Holotype USNM 612201.

Type locality: Tereia Point, Bora Bora Island, Leeward Group, Society Islands, French Polynesia.

Material examined: The type material. HANSA BAY, PAPUA NEW GUINEA: PNG 1976: 206, W of Laing Island, dredged, 30 m, leg. J. Pierret, 29.iii.1976, 1 valve, IG 25.485; PNG 1981: 197, dredged, 36 m, leg. B. Tursch and J. Pierret, 1981, 1 valve, IG 26.132; Laing Island, 1 specimen, ex Tursch coll. (HD).

Distribution: Known from the southwestern Pacific to French Polynesia. Living amongst coral rubble in muddy sand or sand sediments in the littoral.

Remarks: The present specimens are similar to the type material, although the types are more colourful. The specimens from the Hansa Bay are more uniform red or yellow. Juveniles could be easily confused with small specimens of *C. nux*, but the latter species has more complicated radial costae with hollow sections. *H. rehderi* has massive rounded radial costae with fine concentric lamellae. Species of *Argopecten* are not known from the Indo-Pacific region.

Genus *Volachlamys* Iredale, 1939

Volachlamys Iredale, 1939: 356.

Type species (by original designation): *Pecten cumingii* Reeve, 1853. Miocene?-Recent. Yellow Sea and Indo-West Pacific (Hayami, 1989: 16).

Volachlamys singaporina (G. B. Sowerby 2nd, 1842)

(Plate 9, fig. 5)

Pecten singaporinus G. B. Sowerby 2nd, 1842: 74, pl. 13, f. 55, pl. 14, f. 71.

Volachlamys singaporina (Sowerby). Dijkstra & Kastoro, 1997: 276 [synonymy, references, type data, description, discussion].



